

D45S-9

DOOSAN FORKLIFTS DIESEL PNEUMATICS 8,000 lb. to 12,000 lb. Capacity



9-SERIES

D35S-9 | D40S-9 | D45S-9 | D50C-9 | D55C-9



DoosanLift.com

PRODUCT FEATURES

OVERVIEW

SUPERB ERGONOMICS

- Seat-Side Hydraulic Levers
- Low Effort Foot Pedal
- Smaller Steering Wheel w/ Turning Knob
- Telescopic and Tilting Steering Column
- Spacious Legroom
- Increased Headroom
- Recessed Tilt Cylinders
- High Comfort Seat
- Full Color LCD Display
- Convenience Tray

MODERN SAFETY FEATURES

- Guardian Stability System (GSS)
- Operator Sensing System (OSS)
- Superior Visibility through these improvements:
 - Optimized Mast Design
 - Lowered Dashboard
 - Redesigned Overhead Guard (Bar Type)
- Electronic Parking Brake (EPB)
- Programmable Speed Limit (Forward & Reverse)
- Two-Speed Powershift Transmission
- Auto Deceleration
- Seat Belt Interlock Switch (Option)
- Hi-Vis Orange Seat Belt
- Two Oversized Entry Grab Bars
- Secure Anti-Skid Step Plate
- Wideview Panoramic Rearview Mirror (Option)

RELIABLE PRODUCTIVITY

- Powerful 3.4L Doosan D34 Engine
- Quiet Running Tier-4 Final Diesel Engine
- 3 Performance Modes (ECO/STD/HIGH)
- Enhanced Cooling Capacity
- Full Floating Type Cabin (Option)
- IP65 Rated Dust/Waterproof Connectors
- Auto-shift Transmission
- Electronic Inching
- LED Combination Lamps
- Transmission Control Unit (TCU)
- Vehicle Control Unit (VCU)
- Shift ProTek Hot Shift Protection
- Mast Tilt Indicator



DOOSANS 9 SERIES DIESEL LIFT TRUCKS ARE READY TO WORK!

Expanding upon Doosan's tradition of delivering reliable, powerful performance, these trucks offer the best possible value. Doosan provides increased productivity, improved comfort and some of the lowest overall costs of ownership of any competitive forklifts on the market.

SMART VCU FUNCTIONS

- GSS Functions
- OSS Controls
- Mast Interlock
- Inching Pedal
- Seat Belt Alarm
- Empty Seat Alarm
- Water in Fuel Alarm
- Parking Brake Control
- Directional Shift Control
- Autoshift
- Speed Limit
- Mast Tilt Indicator
- Weight Scale
- Auto-Tilt Fork Leveling
- Multi Performance Modes
- On Demand Hydraulic (Idle RPM Up)
- Digital Display Functions
- Planned Maintenance Reminder

** List includes both standard and optional features*

LOWER TOTAL COST OF OWNERSHIP (TCO)

- Optimized Oil Change Intervals
 - Transmission Oil - Was 1,000, **Now 2,000 hrs.**
 - Drive Axle Oil - Was 1,000, **Now 2,000 hrs.**
 - Engine Oil - Was 500, **Now 1,000 hrs.**
- Planned Maintenance Notifications
- Onboard Diagnostics
- Tool Free Access Panels
- 70° Wide Opening Engine Cover
- Easy Access to Maintenance Points
- Dual Element Air Cleaner

OPTIONAL FEATURES

- Modular Cabin
- Newly Designed Full Cabin
- Superior Climate Control, AC & Heat
- Auto-Tilt Leveling
- Industry-specific Application Packages
 - Anti-Dust Package
 - Anti-Corrosion Package
 - Foundry Package



SUPERB ERGONOMICS OPERATOR COMFORT



ERGONOMIC LAYOUT

- Seat-Side hydraulic levers
- Lower dash profile for improved forward view
- Lower step-up into operator's compartment
- Secure 3-point entry and exit system
- Pedals and seat designed for maximum ease of range
- Tilt cylinders located under the floor plate
- Fully adjustable seat and steering column

ENHANCED OPERATOR CONTROL

- Operator leg room is increased by 20%
- Inching & brake pedal effort reduced by 70%
- Thick rubber floor mat reduces heat & noise
- Smaller steering wheel means less steer fatigue
- Increased insulation for sound reduction
- Comfortable fully adjustable suspension seat, standard

The ergonomic compartment design keeps the Operator in complete control, improving productivity while reducing stress and fatigue.



ADJUSTABLE STEERING COLUMN

The telescopic, tilting steering column allows the Operator to properly adjust for comfort. The steering wheel is sized for reduced fatigue.



IMPROVED VISIBILITY

The 9 Series forklifts have increased visibility for the Operator to work safely and comfortably, while providing increased head room for increased Operator comfort.



REDESIGNED INCHING

The 9 Series incorporates a brand new electronic inching sensor, making inching more precise with less effort.



MULTI-FUNCTION LCD DISPLAY

The 5 in. LCD monitor is bright and clear, providing good visibility outdoors to quickly and easily check truck conditions. Available 7" LCD Display.



COMFORTABLE SUSPENSION SEAT

The seat is wide and comfortable. Fully adjustable for a wide range of sizes. Reduces fatigue, for increased productivity.



CREATURE COMFORTS

Document clip and USB port are located within reach of the Operator, making it easy to manage paperwork and more convenient to charge mobile devices.



8,000 lb. to 12,000 lb. Capacity

ENHANCED PRODUCTIVITY RELIABLY DURABLE

REDESIGNED COOLING SYSTEM

The 9 Series' integrated cooling system offers the outstanding heat reduction of traditional heavy-duty radiators without the added costs:

- Dual-module radiator allows truck to run much cooler
- Transmission oil flow increased by 25%
- A newly designed heavy-duty fan increases airflow
- Counterweight redesign increases airflow efficiency
- Steel, Lumber, Stone, Tile or Recycling- even the most grueling applications are covered by the 9 Series Advanced Cooling System

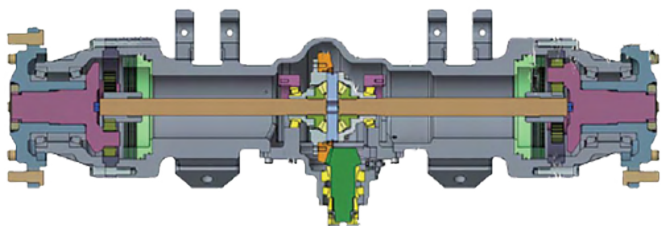
OIL COOLED DISC BRAKE SYSTEM (OCDB)

5-Year/10,000 Hour Warranty

- Eliminate costly brake jobs, save thousands of dollars over the lifetime of the truck
- Brake Discs operate in oil, reduces heat and limits wear
- Increased braking surface for superior stopping power
- More easily serviced in the field than traditional brakes
- Sealed system for maximum protection against contamination

NEW DRIVE-AXLE DESIGN

- Moved the planetary gear from the ends of the hub to further inside the housing. Now maintenance of the brake and planetary gear is much easier.
- Integrated cooling system increases lifetime of brake oil and brake discs
- Improved performance



ELECTRONIC INCHING SYSTEM DESIGN

Newly designed electronic inching pedal:

- Less pedal effort required
- No inching cable or associated costs
- More responsive than cable inching
- Less Operator fatigue

Doosans 9 Series Diesels set the standard for durability in Diesel Truck applications.

PRE-PROGRAMMED PERFORMANCE MODES

The 9 Series is an application-friendly truck that gives you the ability to change engine modes to fit your immediate needs. Simply select the desired mode through the display.

- E - ECO Mode - Designed for fuel economy
- S - Standard Mode - For normal output
- H - High Performance Mode - Increases the power output of the truck for tough work applications



VEHICLE CONTROL UNIT (VCU)

The VCU monitors all aspects of the truck, making adjustments based on operator input and operating conditions. This extends the life of your forklift, saves service costs, raises working efficiency and safety.

VCU Functions include:

- Engine and Transmission Functions
- GSS System
- Safety alarms and warnings
- Vehicle displays and service conditions
- Braking and E-Stop Controls

TRANSMISSION EMBEDDED PARKING BRAKE

- Built-in parking brake in transmission
- Parking brake is released automatically
- No parking lever required
- Negative type parking brake automatically engages when the ignition is switched off

IP65 CONNECTORS

The use of IP65 grade connectors protects the electrical components from ingress of moisture and debris:

- Durability increased
- Run-time maximized
- Stands up to severe applications

SAFETY FEATURES FOR PEACE OF MIND

The 9 Series Diesel forklifts have advanced safety systems in place to protect your most valuable asset: your people.



Operator Sensing System

OPERATOR SENSING SYSTEM - (OSS)

Should the operator leave the seat, the OSS automatically prohibits functions such as:

- Truck movement forward or reverse
- Mast lift, lower and tilt functions
- Seat belt warning light reminds the operator to fasten seatbelt



Guardian Stability System

GUARDIAN STABILITY SYSTEM (GSS)

The Guardian Stability System (GSS) will dynamically protect the Operator and the load to reduce risks. Features Include:

- Decreased travel speed (50%) when mast is raised above primary stage
- Forward tilt reduced to 2° when mast is raised above primary stage
- Alarm sounds when mast is raised above primary stage with mast tilted more than 2°
- Auto speed control when sensors indicate a sharp turn



AUTOMATIC DECELERATION

Should the Operator's foot slip from the accelerator pedal while driving, the truck quickly decelerates automatically, reducing braking distance by up to 50% for improved safety.



ELECTRONIC PARKING BRAKE (EPB)

Automatically engages for safety. Releases automatically after Seat Belt Safety Sequence has been completed and accelerator has been depressed.



SAFE ENTRY/EXIT

Safe Entry/Exit System provides a sturdy OHG mounted grab handle, a hip-restraint grab and wide anti-slip step plate, keeping the Operator safe while entering or exiting the truck in all weather conditions.



SEAT BELT INTERLOCK

Operator must be seated and the seat belt fastened to start the truck. (Optional)



SHIFT PROTEK

SHIFT ProTEK

The 9 Series limits directional changes unless a safe speed is detected, saving valuable dollars in transmission repair.



SPEED LIMIT

SPEED CONTROL

Quickly and easily set speed limits (forward and reverse) to levels which are both safe and productive.

EASY MAINTENANCE COSTS LESS TO OWN



LUBRICANT EXCHANGE CYCLE

Item	Cycle	Time
T/M Oil	2,000 Hr	329 Hr
T/M Oil Filter	2,000Hr	947 Hr
Hyd. Oil	2,000Hr	940 Hr
Hyd. Oil Return Filter	2,000Hr	933 Hr
Hyd. Oil Air Breather Filter	2,000Hr	936 Hr



EASY TO READ DIAGNOSTICS
Easily diagnose truck conditions with a cable and laptop.

AUTO-MAINTENANCE NOTIFICATION
Important maintenance details such as truck service codes and consumable replacement cycles are communicated via the display.

TOOL FREE ACCESS PANELS
The floor plate and side panels are easily detached without tools making inspections much faster.

Easily Accessible

WIDE HOOD OPEN ANGLE

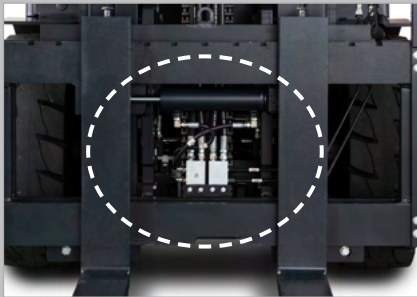
Hood open angle has been increased to 70° to provide easier access to the engine compartment.

TRANSMISSION OIL FILTER AND PRESSURE CHECK

Transmission oil filter and pressure check port has been relocated to the top of the transmission for easy inspection and maintenance.

CENTRALIZED JUNCTION BOX

Electronic components are assembled in a central junction box, making it convenient to inspect all at once.



HYDRAULIC LINE ATTACHMENT

Attachment hydraulics can be serviced individually, saving time and money.



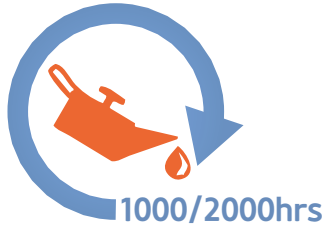
CONVENIENT RADIATOR CHECK

Servicing the radiator is simple thanks to a quick-access cover on the counterweight.

8,000 lb. to 12,000 lb. Capacity

COST SAVINGS

TOTAL COST OF OWNERSHIP REDUCED UP TO 82%



FEWER SERVICE INTERVALS

- Engine Oil Change: Was 500 hr. **Now 1,000 hr.**
- Transmission Oil Change: Was 1,000 hr. **Now 2,000 hr.**
- Drive Axle Oil Change: Was 500 hr. **Now 2,000 hr.**
- Total savings on 5 year routine maintenance = **\$1,170**



HEAVY DUTY STEER AXLE

- Larger king pins and tapered roller bearings for a more durable design
- Angled rollers are stronger against side forces
- Tapered roller bearings have an inner race, eliminating wear on the king pin
- Total savings on 5 year steer components = **\$2,640**



OIL COOLED DISC BRAKES (OCDB)

- Exclusive 5 year/10,000 hr. warranty
- Enclosed system, practically no maintenance required
- Multi-disc, oil cooled brakes provide smooth, consistent stopping power
- Keeps brakes cool in any application
- Total savings on 5 year brake repairs = **\$3,670**

D45S-9 SERIES TOTAL COST OF OWNERSHIP ASSESSMENT			SAVINGS ↓ \$7,480*
5 Year Repair/Maintenance	Competitor	Doosan	
Brake Services & Repair	\$4,415	\$745	
Planned Maintenance Services	\$2,106	\$936	
Steer Axle Services & Repair	\$2,640	\$0	
Total	\$9,161	\$1,681	

OPERATING THE 9 SERIES FOR 5 YEARS CAN SAVE YOU 82%* (OVER \$7,000) VERSUS COMPETITIVE MODELS!

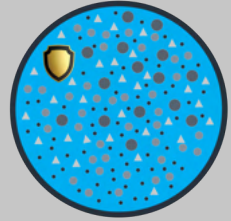
* Total cost of ownership savings will vary by application and hours used

SPECIAL APPLICATIONS ALL AROUND PLAYER

Doosan's 9 Series Diesels offer packages optimized for various applications.

ANTI-DUST PACKAGE

Prevents particulate buildup on the forklift. Preferred option for tough applications such as: Lumber & Stone, Steel, Ceramic Tile, Solid Fertilizer, Cotton and Recycling. Package Includes: Belly Plate, Tilt Cylinder Bellows, Open Core Radiator, Radiator Screen, High Performance Engine Fan, Spark Arrestor and Top Roof Cover.



FOUNDRY PACKAGE

Recommended for customers who mainly operate trucks in high temperature environments such as: Foundry (Iron, Aluminum, or Nonferrous Metals), Casting, Forging and Rolling. Package Includes: Polycarbonate Windows, Heat Resistant Hose on Front End, Heavy Duty Cooling, Tilt Cylinder Protection, Solid Tire and Front Tire Guard (Steel), Belly Plate and Hydraulic Accumulator.



ANTI CORROSION PACKAGE

Recommended for high temperature and high humidity environments. Package prevents the forklift from being corroded by acid, moisture or salt environments found in applications such as: Fisheries, Ports, Chemical Processing and Storage, Sugar and Beverage. Package Includes: Belly Plate, Tilt Cylinder Bellows, Anti Corrosion Paint and Thick Chromium Plating.



NEWLY DESIGNED CABIN

A New Level of Cabin Comfort

- Full Floating Cabin
- Cushioned for Quiet Comfort
- LED Combination Lamps
- Tilting Roof & Sun Visor
- Curved, One-Piece Front Glass
- High Performance Double Wiper Arm
- Air Conditioner & Heater (Optional)
- Internal/External Air Circulation Control
- Cabin Air Filter to Help Reduce Dust Inflow
- Expanded Glass Panel for Improved Visibility



PRIMARY SPECIFICATIONS

MODELS		D35S-9	D40S-9	D45S-9	D50C-9	D55C-9
Load Capacity	lb	8,000	9,000	10,000	11,000	12,000
Load Center	in	24	24	24	24	24
Load Distance	in	22.0	22.0	22.0	22.5	22.5
Wheelbase	in	79.5	79.5	83.3	83.3	83.3
Height (Mast Lowered)	in	87.6	87.8	87.8	87.8	87.8
Free Lift	in	6.3	6.3	6.3	6.7	6.7
Lift	in	118.1	118.1	118.1	120.0	120.0
Height (Mast Extended)	in	167.9	168.1	174.0	176.0	176.0
Height of Overhead Guard/Cabin	in	87.6	87.8	87.8	87.8	87.8
Height of Seat	in	48.0	48.2	48.2	48.2	48.2
Overall Length	in	163.8	165.4	176.4	178.4	179.5
Length to Forkface	in	116.3	118.1	128.4	129.9	131.5
Overall Width	in	53.9	57.3	57.3	57.3	57.3
Turning Radius	in	108.5	110.2	112.2	113.0	114.2

STANDARD FEATURES AVAILABLE OPTIONS

OPERATOR COMFORT

Spacious Leg Room	Standard features
Comfortable Suspension Seat	Standard features
Small Steering Wheel	Standard features
Large Entry Grab Bar	Standard features
Anti-Skid Step Plate	Standard features
Increased Head Room	Standard features
Adjustable Steering Column	Standard features
Rear Grab Bar w/Horn	Standard features
Modular Cabin - Type A,B,C	Optional extras
Full Cabin - New	Optional extras

SAFETY FEATURES

Guardian Stability System (GSS)	Standard features
Operator Sensing System (OSS)	Standard features
Mast IC Beam Construction	Standard features
Electronic Parking Brake	Standard features
Automatic Deceleration	Standard features
Power-Shift Transmission	Standard features
Safe Entry/Exit System	Standard features
Seat Belt Indicator	Standard features
Speed Limit Controls	Standard features
Mast Tilt Indicator	Standard features

PRODUCTIVITY & RELIABILITY

High Powered, Fuel Efficient Engine	Standard features
Performance Modes (Eco., Std., High)	Standard features
Emission Regulation (EPA Tier 4)	Standard features
Electronic Transmission	Standard features
Oil Cooled Disc Brakes (OCDB)	Standard features
Advanced Cooling System	Standard features
IP65 Rated Electrical Connections	Standard features
Auto-shift Controller	Standard features
Heavy Duty Radiator	Standard features
Special Application Packages	Optional extras

LOW MAINTENANCE & LOWER TCO

1,000 hr. and 2,000 hr. PM Intervals	Standard features
Radiator Cover on the Counterweight	Standard features
Easy Diagnostics	Standard features
Easy-Access Components	Standard features
Automatic Service Notification	Standard features
Tool Free Side Panel/Floor Plate	Standard features
Extra Wide Hood Opening	Standard features
Dual Element Air Cleaner	Standard features
Vented Side Panels	Optional extras
Telematics System	Optional extras

Standard features

Optional extras

* This list is based on factory data. Standard or optional features may vary outside North America.



Doosan's Extensive North American Dealer Sales & Servicing Network

Doosan provides superior material handling solutions for your specific needs. From energy efficient electrics to robust internal combustion forklifts, Doosan is your full-line provider.

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