



BRD ENGINEERING
RESEARCH & INNOVATIONS

ENGINE CARBON CLEANING & ENGINE FLUSHING SOLUTIONS

Advanced Decarbonization,
Engine Flushing & Performance Care



HHO CARBON CLEANING MACHINE



ENGINE FLUSHING MACHINE



LOWER
SMOKE



CLEANER
ENGINE



BETTER
PICKUP



SMOOTH
PERFORMANCE

BRD Engineering Research & Innovations

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Near SAP Theater, Tirupur - 641602



SAFE FOR ENGINES
No Disassembly Required



ECO-FRIENDLY PROCESS
Water Based | Non-Toxic



IMPROVES ENGINE LIFE
Restores Efficiency & Performance





**BRD ENGINEERING
RESEARCH & INNOVATIONS**

INNOVATING CLEANER ENGINES



CLEAN POWER
CLEAN ENGINE
CLEAN FUTURE

HHO ENGINE CARBON CLEANING MACHINE

ADVANCED ON-DEMAND HHO SYSTEM FOR ENGINE DECARBONIZING

Professional HHO carbon cleaning machine designed to remove combustion carbon deposits from petrol and diesel engines using controlled on-demand HHO gas treatment. Improves engine performance, reduces emissions, and supports smoother, cleaner engine operation.

KEY FEATURES

- Digital automation control panel
- Pressure gauge and flow monitoring
- Water level & HHO bubble monitoring
- Low-water and alarm indication
- Mobile wheel-mounted design
- Compact industrial body
- Low maintenance operation

APPLICATIONS



POWERFUL
CLEANING



LOW
EMISSION



ENGINE
PROTECTION



WORKSHOP
READY



SERVICE BENEFITS

- Controlled on-demand HHO gas for safe & effective decarbonizing
- Intake-side carbon cleaning support
- Low smoke & reduced exhaust emissions
- Improved combustion for better mileage
- Better pickup and smoother engine response
- Reduced rough idle and engine knocking
- Workshop-ready design for daily professional use

IDEAL FOR PROFESSIONAL WORKSHOPS

Boost Performance | Extend Engine Life | Protect the Environment



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HHO CARBON CLEANING PROCESS

STEP-BY-STEP PROCESS & OPERATOR GUIDE

HHO (Hydrogen-Oxygen) gas is introduced into the engine intake system to break down and remove carbon deposits, improving performance, fuel efficiency and reducing emissions.

STEP-BY-STEP HHO CARBON CLEANING PROCESS



1

INSPECT

Inspect the engine condition and check for intake leaks.



2

WARM UP

Park in a well-ventilated area and warm the engine to normal operating temperature.



3

CONNECT

Connect the HHO outlet hose to a suitable intake point after the air filter or approved vacuum point. Ensure all connections are secure.



4

START LOW

Start with low HHO flow and low to moderate RPM. Increase flow gradually according to engine capacity.



5

MONITOR

Monitor engine sound, RPM stability, exhaust smoke, water level, HHO bubbles, and machine indicators.



6

CONTINUE

Continue treatment for the required duration based on engine size and carbon build-up.



7

COMPLETE

After completion, stop HHO production, remove hose, and let the engine idle for 2-3 minutes.



8

VERIFY

Road-test the vehicle and recheck performance. Repeat if necessary for severe carbon build-up.



SAFE OPERATING NOTES

- Operate only in a well-ventilated area.
- Keep the machine away from open flame, sparks, or smoking.
- Use only trained and authorized personnel.
- Do not exceed recommended flow rates.
- Keep water level within the safe operating range.
- Disconnect the HHO hose safely after treatment.



RECOMMENDED HHO INTAKE FLOW RANGES*

VEHICLE CATEGORY	ENGINE SIZE GUIDELINE	HHO FLOW RANGE (LPH)
 Small Cars (Compact / Hatchback)	Up to 1.2L	450 – 550
 Regular Cars (Sedan / Midsize)	1.2L – 2.0L	550 – 700
 Diesel Cars (Compact / Sedan)	1.5L – 2.5L	600 – 800
 SUVs (Midsize / Large)	2.0L – 3.5L	700 – 950
 Commercial Vehicles (LCV / Pickup / Van)	2.5L – 4.0L	800 – 1000
 Buses (Mini / Large)	4.0L – 7.0L	900 – 1100
 Trucks (Medium / Heavy)	7.0L – 12.0L	1000 – 1200
 Gensets (Industrial / Stationary)	Up to 12.0L	800 – 1200

* Flow depends on engine condition, intake design, and technician judgment. Start low and increase gradually while monitoring engine response.

OPERATOR GUIDANCE

- ✓ Always warm up the engine to normal operating temperature.
- ✓ Maintain stable RPM during the process (avoid racing the engine).
- ✓ Start with low HHO flow and increase gradually.
- ✓ Use a non-return valve and flashback arrestor at all times.
- ✓ Ensure all connections are tight and leak-free.
- ✓ Monitor exhaust smoke, RPM, and engine temperature continuously.
- ✓ Stop immediately if abnormal knocking, misfire, or overheating occurs.
- ✓ Allow the engine to idle for a few minutes after the process.

ENGINE FLUSHING MACHINE

INTERNAL CHEMICAL FLUSHING SYSTEM FOR DEEP ENGINE CLEANING

Advanced blowing and suction based flushing system designed to clean internal engine passages, piston tops, and oil galleries. Helps loosen carbon, sludge and varnish for smoother engine performance and reliable operation.



KEY FEATURES



BLOWING & SUCTION ACTION

Timed pressure and vacuum pulses push and pull cleaning solution through internal passages for effective deposit removal.



MULTI-BOTTLE FLUSHING SYSTEM

Separate solution chambers for intake, exhaust, and crankcase circuits ensure focused and effective cleaning.



CONTROLLED CLEANING PROCESS

Precision pressure, flow and timing ensure safe, consistent and repeatable results for every engine.



BLOW & SUCTION CHEMICAL ACTION

Alternating blowing and suction action for deeper passage cleaning.



PISTON TOP CLEANING SUPPORT

Helps clean piston tops and combustion area for better combustion efficiency.



CARBON & SLUDGE LOOSENING SUPPORT

Loosens carbon, sludge and varnish deposits from internal engine surfaces.



WORKSHOP SERVICE USE

Ideal for workshops, service centers and fleet maintenance operations.



MULTI-POINT CONNECTIONS

Supports multiple engine points for effective chemical circulation.



SAFE & CONTROLLED CLEANING

Engine-safe operation with controlled pressure, flow and process timing.

APPLICATIONS

- » Diesel Engines
- » Petrol / Gasoline Engines
- » Commercial & Industrial Vehicles
- » Construction & Earthmoving Equipment
- » Power Generators
- » Fleet Maintenance & Workshops



BENEFITS

- ✓ Smoother Engine Performance
- ✓ Reduced Vibration & Roughness
- ✓ Better Pickup & Throttle Response
- ✓ Cleaner Piston Area & Combustion Chamber
- ✓ Improved Engine Running Quality
- ✓ Service-Friendly & Time Efficient Operation



OUR FLUSHING PROCESS



Connect
Engine Points



Introduce
Cleaning Solution



Blow & Suction
Circulation



Loosen & Remove
Deposits



Drain
Contaminants



Clean & Protected
Engine



PROFESSIONAL
ENGINE CARE
BUILT FOR
RESULTS.



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BRD

ENGINEERING

RESEARCH & INNOVATIONS

RESEARCH | INNOVATE | ENGINEER | EXCEL

ENGINE FLUSHING PROCESS & SAFETY NOTES

Controlled. Safe. Effective.



01



REMOVE INJECTORS & MARK

Carefully remove injectors and mark each one.
Record original positions for correct reinstallation.

02



ALIGN PISTONS

Align pistons to a safe and equal service position
to ensure proper cleaning.

03



ADD FLUSHING CHEMICAL

Add 150–200 ml of BRD flushing chemical
per cylinder through the injector port.

04



FIT DUMMY INJECTORS

Install dummy injectors and connect the
flushing machine lines securely.

05



RUN FLUSHING MACHINE

Start the machine and run pressure, suction
and blowing cycles.

✓ Pressure Cycle ▶ Suction Cycle ▶ Blowing Cycle
Operate for about 40–45 minutes.

06



BORESCOPE INSPECTION

Inspect internal cleaning results with a
borescope camera.

07



DRAIN OLD OIL

Drain out the old engine oil completely.

08



REFILL WITH NEW OIL

Refill with high-quality engine oil as per
manufacturer specification.

09



ADD FLUSHING ADDITIVE

Add flushing additive (as required) to the new oil.
Run engine for about 10 minutes.

10



DRAIN AGAIN (IF REQUIRED)

Drain the oil again to remove loosened deposits
and residue.

11



REPLACE FILTERS

Replace oil filter, diesel filter and air filter
with genuine quality filters.

12



FINAL REFILL

Refill with high-quality engine oil.
Start engine and verify smooth, clean operation.
Flushing process complete.



SAFETY NOTES



PRESSURE CONTROL

Always operate the machine within
recommended pressure limits.
Do not exceed the maximum
pressure rating.



CHEMICAL HANDLING

Use only recommended flushing
chemicals. Avoid skin and eye
contact. Wear gloves and
eye protection.



BORESCOPE INSPECTION

Inspect before and after flushing
to ensure effective cleaning and
engine safety.



CORRECT ENGINE MATCHING

Ensure the flushing procedure
matches the engine type and
manufacturer guidelines.



FILTER REPLACEMENT

Always replace oil, diesel and
air filters after flushing for
optimum engine protection.



DEEP CLEAN. RELIABLE PERFORMANCE.
LONGER ENGINE LIFE.



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COMPLETE ENGINE CLEANING SOLUTIONS

Advanced Technology.
Cleaner Engines. Better Performance.



HHO CARBON CLEANING MACHINE

Uses advanced HHO technology to remove carbon deposits from the engine's intake, valves, EGR, DPF and combustion chamber.



ENGINE FLUSHING MACHINE

Effectively cleans the engine's internal oil passages and removes sludge, varnish and contaminants using a high-performance flushing process.



KEY BENEFITS



Lower
Smoke



Improved
Pickup &
Torque



Reduced
Rough Idle



Cleaner
Combustion



Smoother
Engine
Running



Better
Customer
Satisfaction



**For dealership, service support, product enquiry
and booking contact us**



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BS6 DPF CLEANING MACHINE

Fully Automatic Multi-Stage DPF Restoration System

-  OFF-VEHICLE
DEEP CLEANING
-  ON-VEHICLE
SUPPORT CLEANING
-  220V AC
SINGLE PHASE
-  FULLY
AUTOMATIC
-  100% SAFE
OPERATION



ADVANCED. AUTOMATIC. RELIABLE.

The BRD BS6 DPF Cleaning Machine is a fully automatic, multi-stage cleaning system engineered for deep cleaning and restoration of Diesel Particulate Filters. Using a combination of high-temperature washing, precision spray, chemical treatment, and air-assisted drying, it removes soot, ash, and harmful deposits to restore filter performance, improve engine efficiency, and extend filter life. Designed for both off-vehicle deep cleaning and on-vehicle support cleaning, it ensures maximum safety, efficiency, and reliability.



RESTORES
DPF PERFORMANCE



IMPROVES FUEL
EFFICIENCY



EXTENDS FILTER
LIFESPAN

DPF CLEANING MACHINE – PRODUCT OVERVIEW



WHAT IT DOES

A fully automatic DPF cleaning system designed for deep and effective restoration of Diesel Particulate Filters using multi-stage cleaning technology.



CLEANING MODES

- Off-Vehicle – Deep Cleaning
- On-Vehicle – Support Cleaning



SUITABLE FOR

- BS6 / Euro 6 Diesel Cars
- SUVs, LCVs, Trucks, Buses
- Fleet Vehicles
- Workshop Service Centers



CORE PROCESS SUPPORT

01

Hot Air
Pre-Cleaning

02

Hot Water Spray
Washing at
87-92°C

03

Air-Assisted
Spray

04

Chemical
Treatment Wash

05

Diesel
Spray Wash

06

Final Hot
Air Drying

KEY BENEFITS



IMPROVED DPF BREATHING

Removes soot, ash & deposits for optimal airflow and engine efficiency.



REDUCED CHOKING RISK

Restores DPF efficiency, reducing regeneration frequency and failures.



SMOOTHER PERFORMANCE

Better acceleration, power delivery & fuel economy after cleaning.



WORKSHOP EFFICIENCY

Fully automatic operation saves time and increases service capacity.



MULTI-STAGE CLEANING PROCESS



ON-VEHICLE SUPPORT
Cleaning Available



OFF-VEHICLE DEEP CLEANING
is the Primary Process



FULLY AUTOMATIC. INTELLIGENT. RELIABLE.



Fully Automatic Operation



Timer-Controlled



Sensor-Monitored



Supports Multiple DPF Sizes

KEY BENEFITS



DEEP SOOT REMOVAL

Removes heavy soot, ash & deposits for restored performance.



CONTROLLED CLEANING

Multi-stage process ensures consistent and precise results.



REDUCED REGENERATION FREQUENCY

Improves DPF life and reduces costly regeneration cycles.



SAFER CLEANING

Effective cleaning without damaging the DPF honeycomb.



FEATURES, AUTOMATION & SAFETY



INBUILT FEATURES

- ✓ Automatic programmed washing methods for all cleaning stages
- ✓ Transparent tanks for Water, Chemical, Diesel & Cleaning Oil
- ✓ Automatic start and stop of each process
- ✓ Restart after power failure from same process stage
- ✓ Timer control for each cleaning step
- ✓ Multi-sensor monitoring for precise performance



SAFETY MEASURES

- ✓ Controlled pressure in all stages
- ✓ Real-time temperature monitoring
- ✓ Emergency stop for instant safety
- ✓ Rigid, non-vibration DPF carrier ensures complete component safety
- ✓ Fully enclosed & protected cleaning chamber
- ✓ No damage to DPF honeycomb structure
- ✓ Leak-safe piping & secure connections
- ✓ Operator-friendly, safe-to-use controls



OPERATIONAL ADVANTAGES

- ✓ Single Phase 220V AC – plug & play
- ✓ Easy loading and unloading of DPF
- ✓ No shaking, no vibration during process
- ✓ Process visibility with transparent tanks and clear display
- ✓ Uniform cleaning with consistent results
- ✓ Improves workshop productivity and turnaround time
- ✓ Reduces manual labor & rework
- ✓ Ideal for all workshops and service centers

TECHNICAL SPECIFICATIONS & APPLICATIONS

PARAMETER	SPECIFICATION	
	Power Supply	Single Phase 220V AC
	Machine Type	Fully Automatic DPF Cleaning System
	Cleaning Modes	Off-Vehicle Deep Cleaning / On-Vehicle Support Cleaning
	Water Temperature Range	87–92°C
	Air Assist Pressure	up to 8 bar
	Process Monitoring	Pressure, Temperature, Step Timer, Status Indicators
	Chamber Support	Rigid No-Vibration DPF Fixing Carrier
	Utility Tanks	Water, Chemical, Diesel, Cleaning Oil
	Restart Function	Resumes After Power Interruption
	Mobility	Heavy-Duty Caster Wheels



APPLICATIONS



BS6 / Euro 6
Diesel Cars



SUVs



LCVs



Trucks



Buses



Commercial
Fleets



Workshops &
Service Centers

KEY BENEFITS



RESTORES AIRFLOW

Removes soot & ash buildup for optimal exhaust flow.



LOWER CHOKING RISK

Reduces DPF blockage risk and prevents regeneration failures.



BETTER PICKUP

Improves torque and acceleration for stronger performance.



SMOOTHER RESPONSE

Ensures stable engine operation and reduced smoke emissions.



WORKSHOP PRODUCTIVITY

Faster turnaround, higher capacity and improved customer satisfaction.



CONTROLLED SAFETY

Fully automated process with safety interlocks and monitoring.

CONTACT, SALES & BUSINESS SUPPORT

Thank you for exploring the **BRD BS6 DPF Cleaning Machine** – a fully automatic, advanced solution engineered for cleaner filters, smoother engine performance, and efficient workshop service. Built for professionals who demand reliability, performance, and long-term value.



BUSINESS VALUE AT A GLANCE



FULLY AUTOMATIC OPERATION

Intelligent automation ensures consistent results with minimal manual intervention.



SAFE PROCESS CONTROL

Advanced sensors and safety interlocks ensure secure, reliable, and controlled cleaning.



DEEP OFF-VEHICLE CLEANING

Powerful multi-stage cleaning restores DPF efficiency and reduces back pressure.



ON-VEHICLE SUPPORT CLEANING

On-vehicle flush mode helps maintain DPF performance between major cleanings.



SUPPORTS MULTIPLE DPF TYPES

Compatible with a wide range of DPF sizes and types using universal adapters.

GET IN TOUCH



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WE ARE HERE TO SUPPORT YOU

Our dedicated sales and support team is committed to delivering the best solution, technical guidance, and after-sales support to keep your workshop running at its best.

**CLEANER FILTERS. BETTER PERFORMANCE.
STRONGER BUSINESS.**