

MOBILE FIELD KITCHEN (MFK)

P-150 ST

P-150 HT



MFK is indigenously developed modular kitchen equipment for mobile applications of armed forces. The MFK has undergone elaborate technical and user's field trials by Pakistan Army before its formal induction. All components of the modular system can be accommodated as a complete kitchen on a single axle trailer or used independent units on ground. MFK being offered is trailer based and can be easily towed with 2.5 ~ 5 ton Vehicles. MFK has the capacity to cook food for up to 400 persons in 2 hours. The trailer has leaf springs suspension and is installed with cable for connecting with towing vehicle indication system. It has good cross country mobility with integral braking system.

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Introduction

MFK is indigenously developed modular kitchen equipment for mobile applications of security personnel. All components of the modular system can be accommodated singly as a complete kitchen line on a single axle trailer or used as independent units on ground. MFK being offered is trailer based and can be easily towed with 2.5 - 5 ton vehicle. MFK has the capacity to cook food for 400 persons in 2 hrs. The system has leaf spring and is installed with NATO standard 12 pin male connector for connecting with towing vehicle. It has good cross country mobility with integral braking system. The MFK is in service with Pakistan Army.



P-150 ST



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Salient Features

- MFK burners multiple fuel based including Liquefied Petroleum Gas (LPG), kerosene oil, diesel and wood / coal. Each burner has inbuilt safety mechanism with independent fuel and air tanks.
- Kitchen body is made of mild steel. Cooking modules and utensils are corrosion / rust free and are made of food grade stainless steel and melamine respectively.
- MFK can function efficiently in all weather and terrain conditions without affecting the quality of food as it is equipped with weather proof tarpaulins for protection of cooking area during inclement weather. These tarpaulins are secured with roof tarpaulin and then fastened to the ground with the help of pegs.
- Four boxes have been provided for storage of various equipment and utensils. Velcro straps have been provided for fastening these boxes.
- Two containers for hot food have been provided which can store hot food for 20 persons for 3 to 4 hours.
- An electrical cable with plug and extension board has been provided with the kitchen for its use on external power supply.

Kitchen Functions

MFK is modular in nature and is equipped with three cooking modules and one Multi Purpose module. Cooking modules work on semi pressure cooking mechanism and can prepare three different dishes at a time in approximately two hours. Each module has an independent multi-fuel burner. The Multi Purpose module incorporates hot plate, Frying and Hot water utensils. The hot plate is used for making chappatis (Asian Bread), omelets and Cutlets etc. The Hot Water utensil is used for boiling water for coffee/tea and also used for steaming of food. These modules can be detached from the main kitchen and can be operated as a separate unit.

Environmental Conditions

MFK has been developed as a rugged system, which can be transported and used in all kinds of terrain.

- MFK can operate in the temperature range of -20°C to $+55^{\circ}\text{C}$.
- MFK can ford through a depth of 500mm.
- It has $25\pm 3^{\circ}$ angle of departure, $25\pm 3^{\circ}$ angle of approach and side slope 20%

Trailer

Trailer body of MFK consists of frame, chimney, accessory boxes and roof. The details are as under:-

Frame

The chassis frame of MFK consists of two longitudinal members of 6 mm thick mild steel sheet having length of 2160 mm. Two sub-longitudinal members of 5 mm thickness have also been attached with main longitudinal members through welding, nuts, bolts and brackets. Four cross members of 6 mm thick mild steel sheet having length of 1980 mm are fitted.



Weight

Gross Weight - 2500 kg

Dimensions

Overall length - 4560 mm

Overall width - 2020 mm

Overall height - 2730 mm

Axle and Suspension

Heavy duty and compatible to gross weight of MFK.

The Mobile trailer has a dead axle with single wheel arrangement. Load carrying capacity of the axle is 3500kg.

Suspension system of MFK consists of leaf spring and hydraulic shock absorbers on both sides.

Wheel and Tyres

MFK is fitted with tyres size 7.50 x 16, 14 PR GLT-II with tubes. Tread pattern of tyre is non-directional cross-country type. Tyres are installed on steel rims. Load carrying capacity of single tyre is 1510 kg, therefore two tyres can comfortably support the load of MFK. Spare wheel along with carrier has been fitted on the tow bar. Castor wheel and its clamp are located on the left side of the tow bar. The height of castor wheel can be adjusted by nut and bolt with the help of a lever.

Brake System

MFK is fitted with efficient hydraulic braking system.

The speed of MFK can be controlled with the braking action of towing vehicle.

Electrical System

The MFK is equipped with 24 volts electrical system. A distribution box is fitted under the frame at rear of the trailer. Brake indicator, reverse and blackout lights have been provided at rear of MFK. 2 x reflectors at left and right side have also been provided. 2 x fluorescent tube lights have been provided under the roof.

Towing Arrangement

MFK is equipped with adjustable type draw bar coupling and 7 pin electrical socket at front of the MFK. A cable has been provided with 12 pins at one end for connection with towing vehicle and 7 pins at the other end for connection with trailer. Cable length is 4.5 m. MFK can be towed easily with all military / commercial vehicles as the drawbar coupling of MFK

can be adjusted according to the height of pintle hook of the towing vehicle.



Kitchen Features

MFK is modular in design and each module has its separate burner. Kitchen is equipped with 5 x modules i.e 2 x large cooking modules, 1 x small cooking module, 1 x tandoor module and 1 x Multipurpose module. These modules work on pressure cooking mechanism and can prepare three different dishes at a time in approximately 2 hours for 150 persons. Hot plate for Multipurpose has been provided which can make 7 chapattis at a time. These modules can be detached from the main kitchen and can be operated as a separate unit. The tandoor is made of mild steel sheet and can be operated on liquefied petroleum gas (LPG), diesel or K-II Oil.



Options	100 lit Cooking Module	100 lit Cooking Module	100 lit Cooking Module	Multi Purpose Module (Frying, Water Heating, Asian Bread)	Tandoor Module (Optional)
3 different dishes, Asian Bread and sweet dish for 150 persons in 2 hrs	✓	✓	✓	✓	✓
Single dish with Asian Bread and sweet dish for 400 Persons					

100 Litres Cooking Module - Qty 2

Cooking Module is used for cooking food for 150 personnel foods like Mutton, Beef, Dall, Vegetable and Rice. Heating source for Cooking Module is Multi Fuel Burner. Cooking Module is fitted with silicon rubber gasket which makes it works as semi-pressure cooker. Curved design and drain fitted with the utensil facilitates cleaning and washing after cooking. Material used for cooking utensil is food grade stainless steel 304L. Cooking Module body housing the utensil is insulated with ceramic wool which prevents heat transfer to surroundings. The module has foldable legs enabling it to adjust height suitable for usage.



Cooking Module



Multipurpose Module

A versatile module used to cook Asian Breads and parathas on a removable hot plate (Tawa) placed on it. The heating source for hot plate (Tawa) is Multi Fuel Burner and Solid Fuel Burner. By using add-ons this module can be adopted for making tea and frying. Multipurpose Module body housing is insulated with ceramic wool which does not allow heat transfer to surroundings. The module has foldable legs enabling it to adjust its height suitable for usage.



Multipurpose Module

Frying Utensil

Frying utensil is used to fry items such as pakkoras, samosas and to make desert, etc. It is made of food grade stainless steel and used as add-on with Multipurpose Module. Frying Utensil is placed on Multipurpose Module after removing hot plate (Tawa). Frying Utensil is fitted with special Triclad Plate for homogenous heating.



Asian Breads Being Cooked

Tea Utensil

It is a food grade stainless steel utensil used to make tea for 150 personnel. This utensil is add-on with Multipurpose Module and can be used by removing hot plate (Tawa). Curved design facilitates washing and a tap is fitted for drainage. Tea utensil is fitted with special Triclad plate for homogenous heating. It is fitted with handles for easy handling.



Frying Utensil



Frying Utensil - In use



Tea Utensil



Tea Utensil - In use



Multi Fuel Burner

A versatile, economical and efficient burner used to heat Cooking and Multipurpose Modules. It can be fired on K-II, diesel or LPG. Its endurance is 2½ hours, sufficient to cook food for 150 personnel in two hours. Multi Fuel Burner has two tanks i.e fuel and air. The air tank is charged with compressed air using Foot or Hand Air Pump. Multi Fuel Burner is user friendly and can be maintained easily.



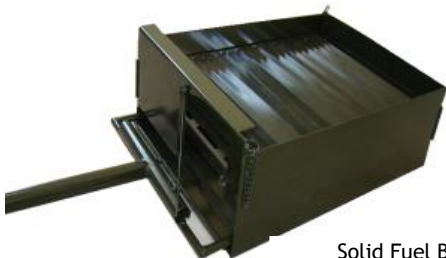
Multi Fuel Burner



Multi Fuel Burner - Top Cover Removed

Solid Fuel Burner

Solid Fuel Burner serves as heating source for Asian Bread and Cooking Modules. Solid Fuel Burner is made of commercial grade steel and can be used when K-II, diesel and LPG are not available. Solid Fuel Burner uses coal or fire wood etc as fuel which is placed on its grill. Solid Fuel Burner is inserted in Cooking and Multipurpose Modules after removing Multi Fuel Burner.



Solid Fuel Burner

Hot Pot

MFK is equipped with two insulated Hot Pots used to pack food and keep it hot for 3-4 hours. Food for 20 personnel can be packed and taken away to a distant location. Hot Pot utensils are made of food grade stainless steel.



Chimney

Chimney is attached with exhaust of Cooking & Multipurpose Modules. It facilitates exhaust of hot air and gases to atmosphere. Exhaust is released well above at a safe height of surrounding area causing no harm to personnel working around.



Chimney Attached With Multipurpose Module

Tools and Spares

MFK is provided with necessary tools and spares required for its maintenance to keep it operational.



Tools



Spares

Generator Set

MFK is equipped with 2.2 KVA gasoline electric generator set. The generator set meets the requirements of electricity in the field for operating compressor and night illumination lights. The operation of generator is simple and can be easily maintained by the technicians.

Compressor

MFK is equipped with 6 litres compressor which is used to charge air tanks of Multi-fuel Burners. The power source of compressor is electricity 220 Volts AC, 50 Hz and same can be obtained through commercial power supply on using electric generator if there is no electricity.

Foldable Stools and Tables

MFK is equipped with 24 foldable stools which are convenience in the field as sitting arrangements while food is being served. The top lid of storage boxes is so designed that it acts as a dining table.

Hand Air Pump

High pressure Hand Air Pump is used to charge air into air tank of Multi Fuel Burner. It is operated manually and

pump air in air tank upto 8 bar pressure. This arrangement is for emergency use only.

Storage Boxes

All items except Cooking and Multipurpose Modules are stored in four storage boxes for easy transportation.



Additional Features

- First aid box
- Hand lamp with cable
- 2 x fire extinguishers - 2kg capacity
- Spare wheel
- Tool box with necessary tools
- Levelling jacks / out riggers to level / stabilize and eliminate vibrations during use
- Black out lights at rear



Compressor

Documentation

Following manual are supplied with each MFK for facilitating its usage / operation and repair maintenance:-

- Operator's manual
- Repair manual
- Parts catalogue

Training Package

User training is provided to 2 x cooks and 2 x technicians per MFK for one week duration at manufacturer's premises.

Transportation Mode



Truck

Helicopter

Aircraft

Ship

Railway

Colour Options



Beige

Blue

Olive Green

MB Green

Silver

Warranty

One year warranty will be provided from the date of delivery.

TECHNICAL SPECIFICATIONS/DELIVERABLES

Nomenclature	Unit	Qty
Trailer with Superstructure		
Chassis with spare wheel	No.	1
Towing arrangement with special towing hook with NATO Std cable/ connectors and self actuating hand brake	No.	1
SS top tables	No.	2
Roof Structure	No.	1
Side storage boxes	No.	4
Fixed tables	No.	2
Additional storage boxes with fixing frames	No.	4
Weather protection cover	No	1
Grease fleeces	Set	2
Brake sys with parking brake	Set	1
Black out light fitted at the rear	Set	1
Reflectors	No.	6
Kitchen Modular Unit		
Cooking module large	No.	2
Cooking module small	No.	1
Multipurpose module	No.	1
Tandoor module	No.	1
Multi Fuel Burner System		
Cooking module multi-fuel burner	No.	3
Multipurpose module multifuel burner	No.	1
Tandoor multi-fuel burner	No.	1
LPG module with 2 x 11 Kg LPG Cylinders	No.	1
Solid fuel burner	No.	2
Special Accessories		
Tea utensil	No.	1
Frying utensil	No.	1
Hot food container	No.	2

Perforated steaming utensil	No.	2
Gen set 2.5 KW	No.	1
Air compressor 116 psi with tank	No.	1
Fire extinguisher 2kg	No.	2
Bund flat/round	No	4
Electric Cable spool - 25 m	Set	1
General Accessories		
Crockery set 24 men	Set	1 Set
Stool folding	No.	24
Degcha with stand for 30/40 persons	No.	1
First aid box (empty)	No.	1
Emergency lights	No.	2
Condiment containers plastic size dia 6"x8"	No.	6
Maint Spares		
Two sets of burners (without air & fuel tanks)	Set	2
Safety valve	No.	1
Nozzles	No.	5
Filters	No.	5
Diffusers	No.	2
Coils	No.	2
Gauge air pressure	No.	1
NR valve	No.	2
Gas cylinder regulator	No.	1
Gas pressure gauge	No.	1
Lid seals	No.	3
Door beadings	No.	3
Brake cable	No.	1
Spark plug	No.	1
Air filter	No.	1
Fuel filter	No.	1

Oil filter	No.	1
Electromagnetic regulator valve	No.	2
Inflation nozzle	No.	1
Nozzle valves	No.	4
Pressure gauge for compressor	No.	1
Weather protection cover pegs	No.	28

Tools		
Allen keys set	No.	1
Hammer 2 Kg	No.	1
Side cutting pliers 8"	No.	1
Pliers 8"	No.	1
Screw driver flat	No.	1
Philip head screw driver 8"	No.	1
Wheel spanner 16mm	No.	1
3 ton jack with handle	No.	1
Spanner open jaw 17 - 19mm and 22 - 24mm	No.	1
Inflation valve with 40ft long pipe	No.	1
Spark plug spanner/socket	No.	1
Air nozzle	No.	1
Tyre pressure gauge	No.	1
Hand pump	No.	1
Cleaning brush nylon	No.	1