



# **TOHATSU PORTABLE FIRE PUMPS**

Reliable and Efficient Fire Protection



# Engine and Pumps are made in Japan by Tohatsu

Tohatsu has been involved in manufacturing and distributing various types of machinery products with engines for more than 75 years. Portable fire pumps are one of our most successful products. Unique combination of originally developed petrol engines, and pump bodies have brought excellent efficiency to emergency fire services, which have made us the leading manufacturer of portable fire pumps throughout the world.

## ***Innovation for adapt to the change of time.***

Tohatsu leads the portable fire pump market through innovation and adaptation for the changing times.

Tohatsu introduces new technology to the engine and pump body, which are developed by Tohatsu, and manufactured environmentally friendly.

In addition, these engines are adapted to the emissions regulations of each country, offering low noise, and a more compact, lighter pump body.

Tohatsu continue to develop new products being a unique manufacturer which develops both engine and pump body.

## ***Feature of Tohatsu pumps***

Tohatsu fire pumps have superior points in common.

***“Lightweight and Compact”***

***“Durability”***

***“High performance”***

Above points are advantages of Tohatsu fire pumps compared to others on the market.

## ***General function of Tohatsu pumps***

Tohatsu fire pumps are equipped the following functions basically.

- 1. Quick and powerful priming***
- 2. Rotating handles to ease transportation***
- 3. Rotating discharge port***
- 4. Cooling water recirculation system***

***Even when operated by Women,  
can be started easily.***

## ***VF21BS***

### ***Performance***

650 Lit /min at 0.4 MPa

500 Lit /min at 0.6 MPa

250 Lit /min at 0.8 MPa

### ***Priming performance***

3.7 sec. at suction height 1 m

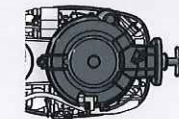
7.0 sec. at suction height 3 m

15.4 sec. at suction height 6 m



### ***Tilt discharge port***

Tilt discharge port enables operator to control discharge easily.



### ***Large sized recoil starter***

Large sized recoil starter enables operator to start the pump much easier.

# VF SERIES

Portable Fire Pumps

*This pump utilizes the industry's first EFI technology.*

## VF53AS

### Performance

1200 Lit /min at 0.6 MPa  
950 Lit /min at 0.8 MPa  
700 Lit /min at 1.0 MPa

### Priming performance

2.0 sec. at suction height 1 m  
3.4 sec. at suction height 3 m  
6.2 sec. at suction height 6 m



### High powered oil-less vacuum pump

VF53AS is equipped a larger sized vacuum pump than other Tohatsu pumps. Therefore, it has a higher priming efficiency and shorter priming time than other pumps.

### Low emission

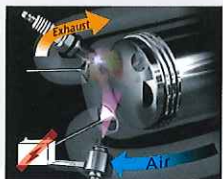
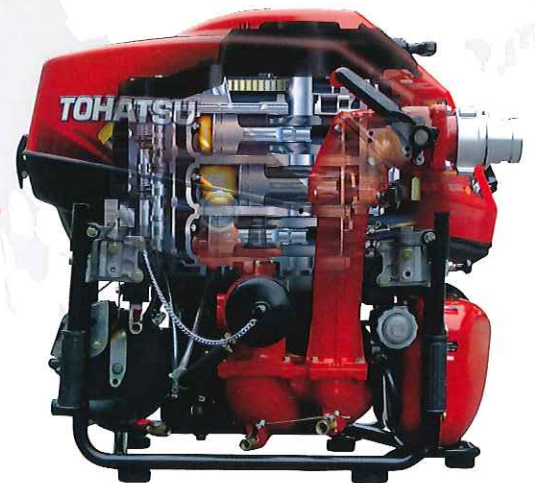
An essential requirement of today when environmental issues are concerned.

### Low noise and Low vibration

Noise: 55dB on low speed operation.  
The engine operation does not disturb communication in fire fighting activities.

### Low fuel tank location

Lower center of gravity increases stability and reduces vibration.



### The industry's first EFI technology

Easy to start engine. Even though the battery runs out.  
This pump can easily be started with the large recoil if necessary.

# VE SERIES

Portable Fire Pumps

Leading a new generation  
of portable fire pumps



## VE1500

### Performance

2050 Lit /min at 0.6 MPa  
1800 Lit /min at 0.8 MPa  
1500 Lit /min at 1.0 MPa

### Priming performance

3.4 sec. at suction height 1 m  
6.7 sec. at suction height 3 m  
14.2 sec. at suction height 6 m



### Stability

VE1500 is equipped with the fuel tank located in the lower section of the pump to increase stability and reduce vibration.



### Multipurpose functions

VE1500 is equipped with several multi purpose functions.

1. Gathered drain valves
2. Electronic Fuel Injection
3. Integrated Flood light
4. Fix exhaust pipe extension easily.

### Twin discharge ports

VE1500 is equipped twin discharge ports



### Gathered drain valves

The drain valves are gathered in one point to allow easy access.

### Electronic Fuel Injection

Electronic Fuel Injection system enables the pump to reduce emissions and fuel consumption, and be started easily.

# VC SERIES

Portable Fire Pumps

*The most popular pump class*



## VC85BS

### Performance

2050 Lit /min at 0.6 MPa  
1800 Lit /min at 0.8 MPa  
1500 Lit /min at 1.0 MPa

### Priming performance

2.9 sec. at suction height 1 m  
5.6 sec. at suction height 3 m  
11.4 sec. at suction height 6 m

| Model   | Priming         | Weight (dry) |
|---------|-----------------|--------------|
| VC85BS  | Auto and Manual | 95kg         |
| VC82ASE | Manual          | 94kg         |

### *The lightest in this class*

In spite of high performance this pump is the lightest in its class. This compact unit fits existing locker spaces, and can be carried by two firemen.

### *Easy maintenance*

Simple, compact design allows easy maintenance.

### *Twin discharge ports.*

These models are equipped twin discharge ports. VC85BS and VC82ASE are equipped twin discharge ports.

## VC82ASE

### Performance

2050 Lit /min at 0.6 MPa  
1800 Lit /min at 0.8 MPa  
1500 Lit /min at 1.0 MPa

### Priming performance

2.3 sec. at suction height 1 m  
4.5 sec. at suction height 3 m  
9.2 sec. at suction height 6 m



# VC SERIES

Portable Fire Pumps

*Enough performance to help you.*



## VC72AS

### *Performance*

1700 Lit /min at 0.4 MPa  
1550 Lit /min at 0.6 MPa  
1300 Lit /min at 0.8 MPa  
950 Lit /min at 1.0 MPa

### *Priming performance*

2.3 sec. at suction height 1 m  
4.5 sec. at suction height 3 m  
9.2 sec. at suction height 6 m

### *Cooling water recirculation system*

Utilizes a closed cooling system for stable operation without contamination.

### *Unique auto choke carburetor*

This device helps engine start easier in all seasonal temperature conditions.

### *Easy to use the handles*

Four handles to carry the pump easily.

Compact unit fits existing locker space, and can be carried by two firemen.

## VC52AS

### *Performance*

1450 Lit /min at 0.4 MPa  
1250 Lit /min at 0.6 MPa  
1000 Lit /min at 0.8 MPa  
600 Lit /min at 1.0 MPa

### *Priming performance*

2.3 sec. at suction height 1 m  
4.5 sec. at suction height 3 m  
9.2 sec. at suction height 6 m



# V SERIES

Portable Fire Pumps

*The lightest in this class*



## V20E/ES

### Performance

660 Lit /min at 0.4 MPa  
540 Lit /min at 0.6 MPa  
290 Lit /min at 0.8 MPa

### Priming performance

3.7 sec. at suction height 1 m  
7.0 sec. at suction height 3 m  
15.4 sec. at suction height 6 m

### Ease transportation

These models are high performance, light weight and compact. Suitable for forest fire fighting.

### Easy maintenance

Simple, compact design allows easy maintenance.

### High durability

These models are manufactured for durability to withstand harsh environments.

## V20D2/D2S

### Performance

660 Lit /min at 0.4 MPa  
540 Lit /min at 0.6 MPa  
290 Lit /min at 0.8 MPa

### Priming performance

3.7 sec. at suction height 1 m  
7.0 sec. at suction height 3 m  
15.4 sec. at suction height 6 m



| Model     | Discharge Valve  | Handle       | Engin Oil   |
|-----------|--|--------------|-------------|
| V20E/ES   | Ball Valve  | Four Handles | Auto mixing |
| V20D2/D2S | Flat Valve  | Two Handles  | Pre-mixing  |

# Specification

|                                       |                           | VF                                 |  | VE                     | VC                                     |                   |                                 | V                                      |  |                     |   |                   |                     |
|---------------------------------------|---------------------------|------------------------------------|--|------------------------|--|-------------------|---------------------------------|--|--|---------------------|---|-------------------|---------------------|
|                                       |                           | VF21BS                             | VF53A5                                 | VE1500                 | VC85B5                                 | VC82A5E           | VC72A5                          | VC52A5                                 | V20E                                   | V20E5               | V20D2                                   | V20D2S            |                     |
| Engine                                | Type                      | 4-Cycle                            |  |                        |  |                   | 2-Cycle                         |  |  |                     |   |                   |                     |
|                                       | Number of Cylinder        | 2-Cylinder                         | 3-Cylinder                             |                        |  |                   | 2-Cylinder                      |  |  |                     | 1-Cylinder                              |                   |                     |
|                                       | Cooling System            | Suction Water Cooled               |  |                        |  |                   |                                 | Air Cooled                             |  |                     |   |                   |                     |
|                                       | Bore x Stroke             | 55 x 44 mm                         | 61 x 60 mm                             | 81 x 78 mm             | 78 x 78 mm                             |                   | 76 x 68 mm                      |  |  | 66 x 58 mm          |   |                   |                     |
|                                       | Piston displacement       | 209 cc (12.7 cu in)                | 526cc (32.1 cu in)                     | 804 cc (49.0 cu in)    | 746 cc (45.5 cu in)                    |                   | 617 cc (37.6 cu in)             |  |  | 198 cc (12.0 cu in) |   |                   |                     |
|                                       | Output                    | 7.3 Kw (10PS)                      | 22 Kw (30 PS)                          | 44 Kw (60 PS)          | 40.5 Kw (55 PS)                        |                   | 30 Kw (40.8PS)                  |  |  | 8.6 Kw (11.7PS)     |   |                   |                     |
|                                       | Fuel Type                 | Unleaded Gasoline (Min. 87 Octane) |  |                        |  |                   |                                 |  |  |                     |   |                   |                     |
|                                       | Fuel Tank Capacity        | 4.3 Lit                            | 10 Lit                                 | 24 Lit                 |  |                   |                                 | 18 Lit                                 |  |                     | 3.5 Lit                                 |                   |                     |
|                                       | Fuel Consumption          | 3.1Lit/Hr                          | 9.5 Lit/Hr                             | 22 Lit/Hr              |  |                   |                                 | 20 Lit/Hr                              |  |                     | 16 Lit/Hr                               |                   |                     |
|                                       | Fuel System               | Single Carburetor                  | Electronic Fuel Injection              |                        |  |                   |                                 | Single Carburetor with Auto Choke      |  |                     |   |                   |                     |
|                                       | Lubrication System        | Wet Sump                           |  |                        | Auto mixing                            |                   |                                 | Auto mixing                            |  |                     | Pre-mixing (Gasoline 30 : Engine oil 1) |                   |                     |
|                                       | Lubrication Oil           | SAE 10W-30 (API: SF,SG,SH,SJ)      |  |                        |  |                   |                                 | 2-Cycle Engine Oil                     |  |                     |   |                   |                     |
|                                       | Oil Tank Capacity         | 1 Lit                              | 2 Lit                                  |                        |  |                   | 1.6 Lit                         |  |  | 0.5 Lit             |   |                   |                     |
|                                       | Starting                  |                                    |  |                        | Electric and Manual                    |                   |                                 | Manual                                 |  |                     | Electric and Manual                     | Manual            | Electric and Manual |
|                                       | Ignition                  | Digital CDI                        |  |                        |  |                   |                                 | CDI                                    |  |                     |   |                   |                     |
| Suction                               | Suction System            | 4-Blade Rotaly Vane Vacuum Pump    |  |                        |  |                   |                                 |  |  |                     |   |                   |                     |
|                                       | Maximum Suction Height    | 9 m                                |  |                        |  |                   |                                 |  |  |                     |   |                   |                     |
|                                       | Automatic Suction         | No                                 | Yes                                    | No                     | Yes                                    | No                | No                              | No                                     | No                                     | No                  | No                                      | No                |                     |
| Pump                                  | Type                      | Single Suction, Single Stage       |  |                        |  |                   |                                 |  |  |                     |   |                   |                     |
|                                       | Suction Thread and Dia.   | JIS 2-1/2" (65mm)                  | JIS 3" (75mm)<br>BSP 4" (100mm)        | BSP 4" (100mm)         | JIS 3-1/2" (90mm)<br>BSP 4" (100mm)    |                   | JIS 3" (75mm)<br>BSP 4" (100mm) |  | JIS 2-1/2" (65mm)<br>BSP 2-1/2" (65mm) |                     |   |                   |                     |
|                                       | Discharge Thread and Dia. | JIS 2-1/2" (65mm)                  | JIS 2-1/2" (65mm)<br>BSP 2-1/2" (65mm) | BSP 2-1/2" (65mm)      | JIS 2-1/2" (65mm)<br>BSP 2-1/2" (65mm) |                   |                                 | JIS 2-1/2" (65mm)<br>BSP 2-1/2" (65mm) |  |                     |   |                   |                     |
|                                       | Discharge Number          | Single                             | Twin                                   |                        |  | Single            |                                 |  | Single                                 |                     |   |                   |                     |
|                                       | Discharge Valve           | Ball                               | Ball or Flat                           | Flat                   | Ball                                   | Ball or Flat      | Flat                            |  |  | Ball                | Flat                                    |                   |                     |
| Performance<br>Head = 3m<br>Hose = 6m | @0.4MPa                   | 650 Lit/Min (171 USG)              | -                                      | -                      | -                                      | -                 | 1700 Lit/Min (449 USG)          | 1450 Lit/Min (383 USG)                 | 660 Lit/Min (174 USG)                  |                     |   |                   |                     |
|                                       | @0.6MPa                   | 500 Lit/Min (132 USG)              | 1200 Lit/Min (317 USG)                 | 2050 Lit/Min (542 USG) |  |                   | 1550 Lit/Min (410 USG)          | 1250 Lit/Min (330 USG)                 | 540 Lit/Min (142 USG)                  |                     |   |                   |                     |
|                                       | @0.8MPa                   | 250 Lit/Min (66 USG)               | 950 Lit/Min (251 USG)                  | 1800 Lit/Min (476 USG) |  |                   | 1300 Lit/Min (343 USG)          | 1000 Lit/Min (264 USG)                 | 290 Lit/Min (76 USG)                   |                     |   |                   |                     |
|                                       | @1.0MPa                   | -                                  | 700 Lit/Min (185 USG)                  | 1500 Lit/Min (396 USG) |  |                   | 950 Lit/Min (251 USG)           | 600 Lit/Min (158 USG)                  | -                                      |                     |   |                   |                     |
| Weight                                | Dry Weight                | 52 kg (114.64 lb)                  | 101 kg (222.66 lb)                     | 107 kg (235.89 lb)     | 95 kg (209.44 lb)                      | 94 kg (207.23 lb) | 85 kg (187.39 lb)               |  | 36 kg (79.37 lb)                       | 42 kg (93.59 lb)    | 36 kg (79.37 lb)                        | 42 kg (93.59 lb)  |                     |
|                                       | Wet Weight                | 57 kg (125.66 lb)                  | 110 kg (242.5 lb)                      | 118 kg (266.14 lb)     | 110 kg (242.5 lb)                      |                   | 101kg (222.66 lb)               |  | 39 kg (85.98 lb)                       | 46 kg (101.41 lb)   | 39 kg (85.98 lb)                        | 46 kg (101.41 lb) |                     |
| Dimensions<br>(mm)                    | Overall                   |                                    |  |                        |  |                   |                                 |  |  |                     |   |                   |                     |
|                                       | Length x Width x Height   | 480 x 590 x 560                    | 690 x 790 x 740                        | 748 x 732 x 827        | 742 x 682 x 760                        | 742 x 682 x 760   | 700 x 620 x 730                 | 700 x 620 x 730                        | 560 x 475 x 530                        | 560 x 475 x 530     | 555 x 470 x 532                         | 555 x 470 x 532   |                     |

## NOTE

- \* JIS: Japanese Industrial Standards
- \* BSP: British Standards Pipe Tread
- \* Wet Weight : Ready for Operation



**Tohatsu Corporation**  
 5-4, Azusawa 3 chome, Itabashi-ku, Tokyo 174-0051 Japan  
 Phone: 81-3-3966-3137 Fax: 81-3-3966-2951  
<http://www.tohatsu.co.jp>