

ZVF 50



AVIATION FUEL NOZZLE, NON-AUTOMATIC INSTALLATION AND OPERATING MANUAL

English
page 8

DESCRIPTION

The **ZVF 50** is a manual (non-automatic) high flow nozzle for overwing and helicopter refuelling for all types of civil and military aviation fuels.

The construction of the nozzle fulfils the requirements of JIG, ATA Spec. 103, PEI/RP 1300-13, SAE AS 1852 (interface nozzle spout).

Operating Conditions:

| | |
|------------------------------|---|
| Nominal size: | DN 50 mm (2") |
| Flow rate: | Suggested up to 400 l/min. (85 IGM) |
| Working pressure max. | 10 bar (Nominal Pressure PN 10) |
| Operation temperature range: | -40° C up to +55° C |
| Operation: | for pressure service (Standard type) also suitable for defuelling ('L' type) |

Before leaving the factory, each nozzle is subjected to a functional test and validated with a serial number.

INSTALLATION

The ZVF 50 is delivered ready for use. Nozzles should only be installed and tested by competent personnel. Applicable laws, regulations and Codes of Practice have to be followed. After connection of the hose assembly to the nozzle, please follow the following steps:

1. With low pump pressure (0,5–1 bar)

- check tightness of all components.
- vent and flush the nozzle with AVGAS or JET A1 fuel by pulling the lever several times.
Note: Use suitable receiving container. The used fuel volume has to be disposed, do not use it again.

2. With maximum pump pressure intended for operation

- check tightness of all components.
- vent and flush the nozzle with AVGAS or JET A1 fuel by pulling the lever several times.
Note: Use suitable receiving container. The used fuel volume has to be disposed, do not use it again.

Always wear suitable protective clothing.

OPERATION

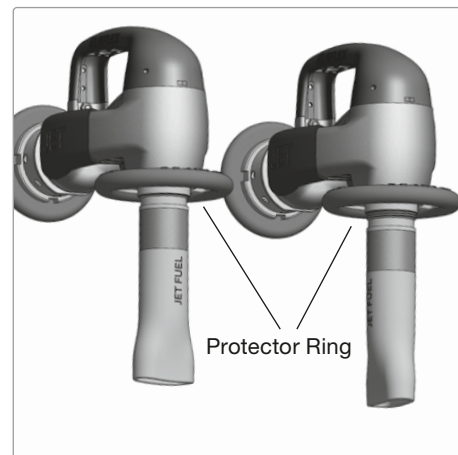
For the operation of the ZVF 50, local laws and code of practice must be followed.

When the pump is running, fuelling is started by pulling the nozzle lever. The flow rate of the ZVF 50 can be regulated smoothly and easily. At the beginning and towards the end of the refuelling operation – especially when dealing with awkwardly located or shaped filler openings – a reduced flow rate is advisable to safely avoid fuel splashbacks from the filler opening.

The necessary hold-open force of the lever is lower than with comparable nozzles. When using the LeverAssist® hold-open aid (page 10) further reduces the necessary hold-open force by 75 %.

To end fuelling, release the lever of the ZVF 50.

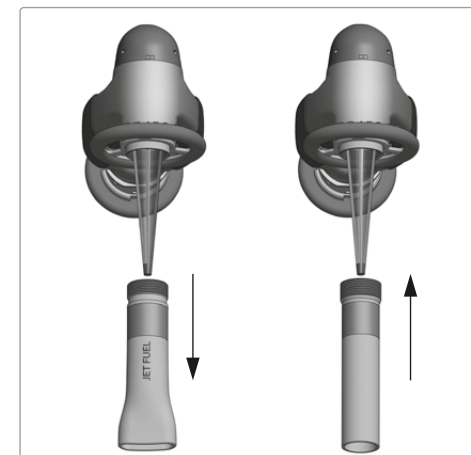
SPOUT WITH SCREW-IN-CONNECTION (SIC)



Rotating spout:

The spout can be rotated to the required position. This is useful for JET refuelling, to locate the nozzle to the filler opening.

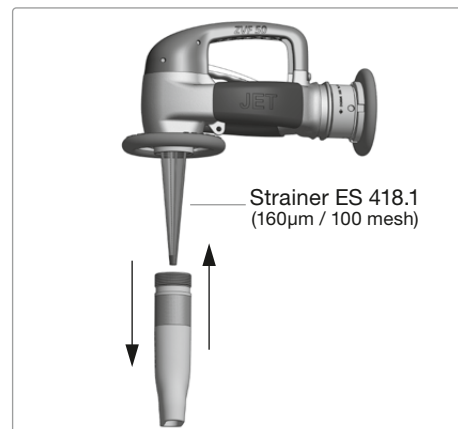
Loosen protector ring anti-clockwise, then rotate spout to required position and fix protector ring hand-tight.



Change spout:

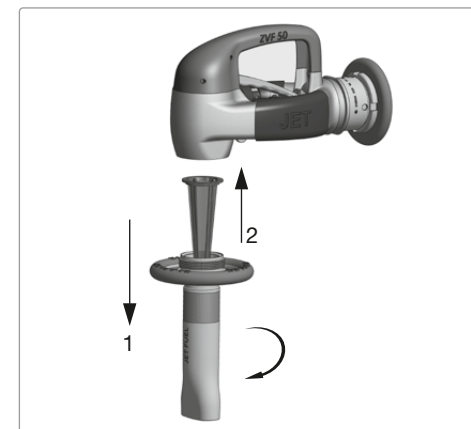
Protector ring must be fixed hand-tight. Unscrew spout anti-clockwise and substitute with required new type or size. Hand-tight connection is sufficient for tight connection.

NOTE: follow local regulations in place. To avoid misfuelling only spouts should be used which are assigned for the used fuel.



Inspection of strainer:

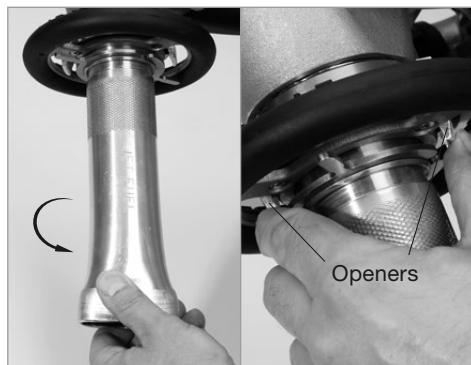
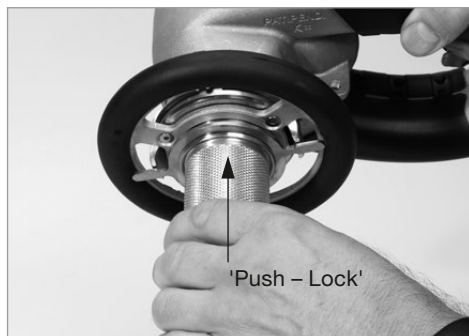
Protector ring must be fixed hand-tight. Unscrew spout anti-clockwise. Inspect the strainer while holding it against the light. If a proper inspection is not possible or cleaning is necessary, the strainer is removed – see remarks on right hand side.



Cleaning of strainer:

Loosen and unscrew protector ring. The strainer can now be taken out of its seat. Clean by blowing out with air or in a suitable cleaning bath. If the strainer ES 418.1 is damaged, replace. Re-assembling in opposite order, hand-tight.

SPOUT WITH PUSH-TWIST-LOCK-CONNECTION (PTL)



Insert Spout:

The Push-Twist-Lock-Connection (PTL) allows an easy change of spouts by pushing the spout into the protector ring. The spout is locked until it clicks once. The spout remains rotatable.

Rotating spout:

The spout can be rotated to the required position once the spout is inserted.

Change spout:

Press the openers to unlock the spout and then remove.



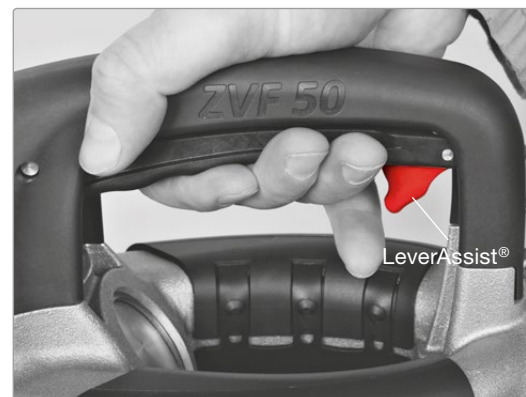
Inspection of strainer:

Press openers to unlock the spout and then remove. If a proper inspection is not possible or cleaning is necessary, the strainer is removed.

Cleaning of strainer:

Loosen the protector ring anti-clockwise to take out the strainer of its seat. Clean by blowing out with air or in a suitable cleaning bath. If the strainer ES 418.1 is damaged, replace. Re-assembling by inserting the strainer, then fix protector ring hand-tight.

OPERATION OF LEVERASSIST



LeverAssist® reduces the necessary hold-open force of the lever by 75 %, making the fuelling process more comfortable. The 'Deadman' safety function remains completely unaffected.

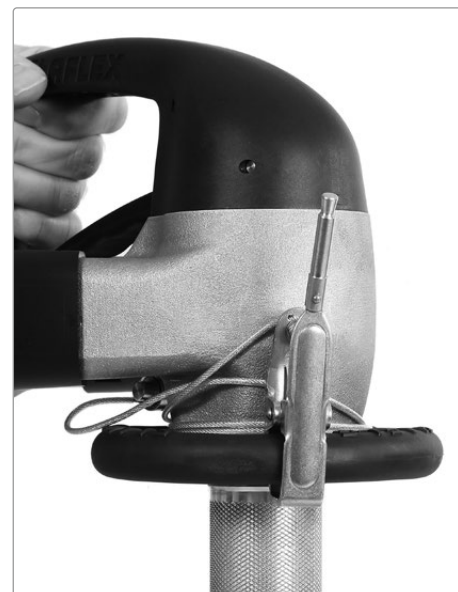
The flow rate can be adapted to the capacity of the filler opening: low, medium or full refuelling speed.

Pull lever to required position, activate LeverAssist with the small finger and hold it. Reduce pull force to the lever while continuing to hold the LeverAssist in its position.

GROUND CABLE ASSEMBLY / DUST CAP ASSEMBLY

Ground Cable Assembly EKG: Attach to the mounting lug below the nozzle body. To store, wind cable around the protector ring as shown.

Dust Cap Assembly GKG: Attach to one of the ribs of the protector ring. When changing the spout, the dust cap assembly should also be changed to the suitable type.



USE OF DEFUELLING SPOUT SRG-32

Only suitable for ZVF 50 ... 'L' (dry hose delivery):

SRG-32 is a flexible and electrically conductive NBR rubber defuelling spout in DN 32 with flat strainer 25 mesh (EK 367) and protector. It can be directly screwed in to 2" female thread of nozzle body.

PLEASE NOTE

Proper Handling of the Nozzle:

The ZVF 50 is equipped with various external soft plastic parts. These are intended to protect the aircraft. **To prevent damage and contamination of the spout to the nozzle, it must not be pulled along the ground or dropped to the ground.** When not in use, the nozzle should be stowed away in a suitable device/**nozzle holder, such as the Elaflex NB-ZVF.** For the construction of a device, see ZVF 50 dimensions on page 7 and Elaflex Information 10.15.

Avoid Misfuelling:

Refuelling aircraft with the wrong type of fuel can lead to serious consequences. To clearly allocate the nozzle to the used fuel type, ZVF 50 are available either as **black** marked 'JET' or **red** marked 'AVGAS' type. We strongly advise to use aviation nozzles only for the designated fuel type. If local regulations permit, the spout type can be temporarily changed to adopt to special filler openings. It is the responsibility of the operator to safeguard that these actions may never lead to any confusion or to misfuelling with the wrong fuel type.

Problematic Filler Openings - Clean and Well Regulated Refuelling:

The ZVF 50 is a high flow nozzle. The flow rate (max. 400 l/min) should be adapted to the form and capacity of the fuel tank as well as the size of the spout. Flow rates which are too high may generate a splashback out of the filler neck. Depending on the type of aircraft, the fuelling shall always be done with a suitable flow rate. At the end of the refuelling operation, we recommend to reduce the pump performance and flow rate.

MAINTENANCE

ZVF 50 nozzles do not require regular maintenance. Elaflex suggests recurring visual inspections to check the external and functional condition of the nozzle. When connecting threaded parts (substitution of spout or swivel) we suggest to slightly lubricate the thread surface.

If the nozzle is equipped with a sight glass, it must always appear clearly transparent and not show any sign of damage. If in doubt, the nozzle shall be put out of service for an inspection by competent personnel.

MALFUNCTION

If malfunctions such as leakage, sluggishness of mechanical parts or too flow rates occur, fuelling should be immediately stopped, and the nozzle should be inspected by competent personnel. Cause for a low flow rate often are clogged strainers or filters. These should be checked respectively cleaned first. Damaged external protection parts of the ZVF 50 should be replaced.

Always follow your company's laid down requirements and procedures.