

Hydra-Flo®

Mechanical and non-pressurised fuel filling valves

WEHR

Mining technology for a sustainable future

**Safe, clean and reliable overflow
protection systems that are simple
to install and easy to maintain.**



Hydrau-Flo® valves remove the risk of overfilling, spillage and tank rupture, minimising fuel transfer hazards for both the operator and the environment.



Did you know at 1,000 litres per minute, every second of spillage equates to more than 15 litres of fuel wasted and released into the environment?

Our patented Hydrau-Flo® valves are a liquid filling solution that removes the risk of overfilling, spillage and tank rupture, minimising the costs associated with fuel wastages and equipment damage. Safety is improved by minimising the risk of fire from fuel spillages and removing fuel spray associated with conventional pressurised systems.

Hydrau-Flo® valves deliver industry best practice, non-pressurised refuelling and are a low cost, mechanical and safe solution. They are simple to install and easy to maintain.

Safety and environmental responsibility are top priorities for all mine sites, and a robust safety culture includes taking advantage of new, safer products. With the ability to reduce downtime, lower overall cost of ownership and improve the safety of workers, Hydrau-Flo® valves represent value for money.

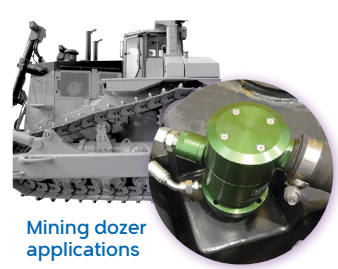
Hydra-Flo® valve kits are manufactured to suit a wide range of applications. These configurations are designed for individual equipment needs using our professional engineering design service.



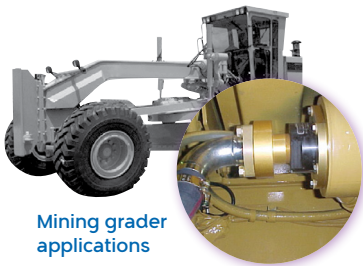
Mining truck applications



Mining excavator applications



Mining dozer applications



Mining grader applications



Drill applications



Mining service truck applications



Dewatering pump applications



Lighting tower applications



Gantry applications



Hydraulic fracturing applications



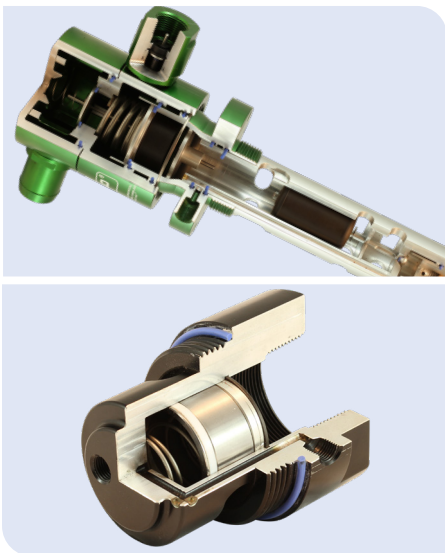
Road transport applications



Rail applications



This low cost, mechanical and safe solution delivers industry best practice non-pressurised refuelling.



Top: Hydrau-Flo® float control valve (HF1008Z0007)

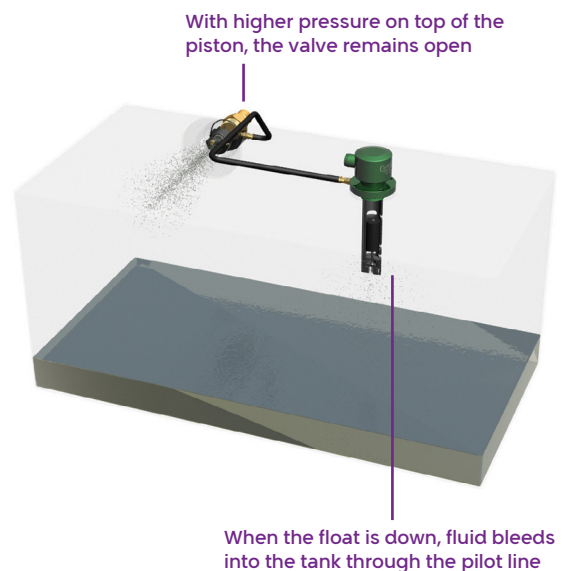
Bottom: Hydrau-Flo® fuel filling black valve (HF1105Z0001)

Hydrau-Flo® fuel filling valve system

- Provides flow rates up to 1500 lpm (396 US gpm)
- Hydraulically actuated
- Operates on fluid level not pressure
- Used in conjunction with existing fast fill systems
- Prevents overfilling
- Prevents fuel spillage and wastage
- Removes the risk of tank rupture due to pressure build up during and after filling
- Minimises the risk of fire as a result of fuel spillage
- Reduces costs associated with fuel wastage and equipment damage
- Significantly improves safety and environmental outcomes
- Ground level refuelling

Hydrau-Flo® system solution

- System depends on fluid level, not tank pressure, and cannot be overridden
- Fuel enters through the standard fast fill receiver and Hydrau-Flo® fast filling valve
- A small portion of the flow is re-directed through a pilot line to the float control valve
- Once the desired fuel level in the tank is reached, the flow will be shut off
- The fuel in the pilot line now applies equal pressure to the back of the fast filling valve
- The spring in the fast filling valve now acts as the differential closing off the piston





Fuel nozzle and receiver

Hydra-Flo® fuel nozzles and receivers provide safe, high flow diesel refuelling and are part of the patented Hydra-Flo® non-pressurised fuel filling system.

Hydra-Flo® fuel nozzles and receivers are available in two sizes, 1000 LPM and 1500 LPM and can be used in a wide range of industrial applications. See page 21 for technical specifications.

Hydra-Flo® fuel nozzles

Hydra-Flo® fuel nozzles are designed to ensure accurate shut off at all flow rates. Design features include:

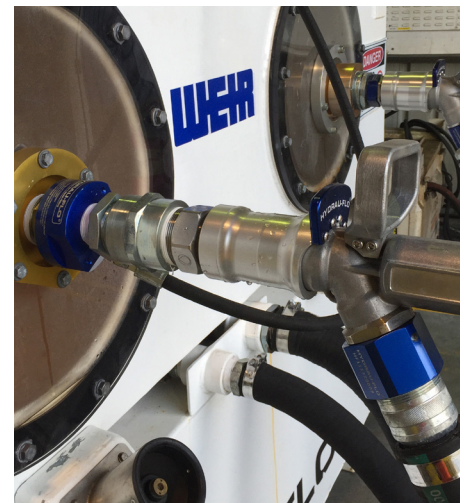
- Robust construction with aluminium and stainless steel components
- Trouble free, leak proof operation due to polyoxymethylene bushing and fluorsilicone O-rings
- Electroless nickel plated piston wear cylinder designed to provide lubricity, long life and consistent shut off pressures
- Nose easily removed without tools for cleaning in the field
- Connects to all standard receivers

Hydra-Flo® fuel receivers

Hydra-Flo® fuel receivers are designed with an enclosed stem spring construction, which results in a smooth fuel flow path that extends the life of both receiver and nozzle.

The revolutionary design allows the wear surface of the fuel receiver to be replaced without removing the receiver from the tank or the loss of any fuel. Design features include:

- Designed to reduce vibration at higher flows
- Removable stainless steel wear sleeve
- Internal design poppet control spring
- Body and cap made of aircraft grade aluminium
- Connects to all standard nozzles



Application Questionnaire

What is your reason for this installation? (Mark boxes 1 to 6 in order of priority with 1 being the most important)

- | | | |
|---------------------------------------|----------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Fast filling | <input type="checkbox"/> Overfill protection | <input type="checkbox"/> Fuel theft |
| <input type="checkbox"/> Trickle feed | <input type="checkbox"/> Fuel surge | <input type="checkbox"/> Zero spill compliance |

Your responses to these questions will ensure our experts specify the right solution for you.

1. Is the application a stationary or mobile situation that the Hydrau-Flo® system is to be fitted to?
2. What is the make, model and year of manufacture of the machine (and fast fill system if known)?
3. What is your required flow rate? (minimum & maximum)
4. What is the fuel tank capacity and material of construction?
5. What size are the inlet and outlets on the tank?
6. Can the tank be welded/hot worked? (if applicable)
7. Are fuel inlets required on either side of the machine?
8. Is simultaneous dual or triple filling needed?
9. A pilot line which connects the tank inlet (fuel filling valve) and (float control valve) can be run internally or externally. Which is preferred? Magnet anchors are available for steel tanks.
10. Supply a drawing and/or photos of the fuel tank (in particular, where the Hydrau-Flo® valves can be mounted).
11. Is this enquiry for a single piece of equipment or multiple pieces of equipment?
12. How many Hydrau-Flo® kits do you require?
13. If the application is for trickle feed, is redundancy required? Use anti-surge breather HF1008Z0002.
14. Any further information regarding the tank?
15. Shipping location (city, state, country)
16. Timing of your project (when do you expect to require the system)?
17. Do you require installation assistance, or do you have technical personnel onsite to complete the installation?

Our Hydrau-Flo® mechanical and non-pressurised fuel filling valves:

Feature non-pressurised refuelling (industry best practice)

- Low cost solution
- Improved filling times, thereby maximising the production hours of equipment fleets
- Prevents overfilling, fuel spillage and waste
- Removes the operator from influencing fill levels
- Helps to eliminate fuel theft

Deliver greatly improved safety and environmental outcomes

- Removes the risk of tank ruptures from pressure build up during and after filling
- Removes fuel spray associated with pressurised systems
- Minimises the risk of fire from fuel spillages
- Allows for ground level refuelling

Have been tested and proven for 20 years

- Based on a proven mechanical principle of spring opposed hydraulic pressure
- Comprehensive 3 year warranty
- Simple installation
- Minimal maintenance
- The only Australian designed and assembled non-pressurised fuelling system
- Proven in extreme temperatures - 65°C (-85°F) with Environmental Exposure Certification
- Install base of over 25,000 units



Hydrau-Flo® receivers

Hydrau-Flo® selection guide

Answer the questions on page 8 and use the selection guides to identify which product best suits your needs. See page 21-31 for product dimensions.

Select your receiver

See table right

Select your fuel filling valve (FFV)

See page 11

Select your adaptor

See page 12

Select your lines and connectors

See page 16

Receivers

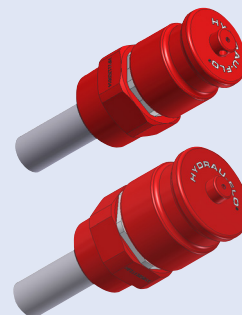
Hydrau-Flo® receiver

1000 Lpm HF1113Z0005
1500 Lpm HF1113Z0006



Hydrau-Flo® evacuation receiver

1000 Lpm HF1113Z0016
1500 Lpm HF1113Z0017



Banlaw™ receiver (light)

HF1113Z0003



Wiggins™ receiver (5 PSI)

HF1113Z0002



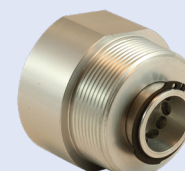
Spring to suit Wiggins™ receiver (13 PSI)

HF1113Z0001



Hydrau-Flo® evacuation valve

HF1204Z0004



Hydra-Flo® valves and breathers

Fuel filling valves (FFV)

Black FFV

For new applications and some existing applications.

- Flow rate to 1000 Lpm (264 US Gpm)
- Valve mounting 3" NPS male O-ring

HF1105Z0001



Red FFV

ZNC3 Recess.

- Flow rate to 800 Lpm (211 US Gpm)
- Valve mounting 2" NPT male

HF1105Z0002



Blue or Green FFV

Retro fit for direct mounting to equipment tanks with 2" NPT female fittings.

- Flow rate to 800 Lpm (211 US Gpm)

- Valve mounting 2" NPT male

HF1105Z0003 (blue)

HF1105Z0013 (green)



Blue 1½" FFV

For compact machinery and underground applications.

- Flow rate to 650 Lpm (171 US Gpm)
- Valve mounting 1½" NPT male

HF1105Z0004



Gold 1" FFV

- Flow rate to 80 Lpm (21 US Gpm)

- Valve mounting 1" NPT male

HF1105Z0006



Gold FFV

- Flow rate to 800 Lpm (211 US Gpm)

- Valve mounting 2" NPT male

HF1105Z0007



Orange long nose FFV

- Flow rate to 1500 Lpm (396 US Gpm)

- Valve Mounting 4" NPSM O-ring

- Receiver Port 2" NPT female

HF1105Z0011



Fuel filling valves (FFV)

Standard 2" FCV

Incorporates rollover shut-off protection and anti-surge.

- Tank fill rate to 1000Lpm (264 US Gpm)

- Valve mounting 2" NPT male

HF1008Z0001



Standard 1½" option FCV

Incorporates rollover shut-off protection and anti-surge.

- Tank fill rate to 1000 Lpm (264 US Gpm)

- Valve mounting 1½" NPT male

HF1008Z0009



Standard 2" FCV with breather option

Provides filtered air to prevent fuel contamination. Capable of environmental filtering to 3 micron.

- Tank fill rate to 1000 Lpm (264 US Gpm)

- Filtration 3 micron using external filter

- Valve mounting 2" NPT male

HF1008Z0007 (std) HF1008Z0008 (short)



Level float control valves (LFV)

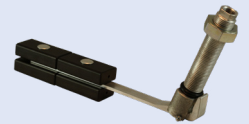
Stationary equipment only, skid mounted pump sets, generators and lighting plants.

- Valve mounting stem ¾" UNF

- Working pressure up to 1.5 bar

HF1007Z0001 - 100mm stem

HF1007Z0002 - 250mm stem



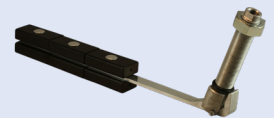
Stationary equipment only, remote and gravity filling from an auxiliary fuel tank.

- Valve mounting stem ¾" UNF

- Working pressure up to 20 bar

HF1007Z0003 - 100mm stem

HF1007Z0004 - 250mm stem



Anti-surge breathers (ASB)

Anti-surge breather has the same functions as float control valves incl. rollover protection and fuel anti-surge.

- Tank fill rate to 1000 Lpm (264 US Gpm)

- Valve mounting 2" NPT male

HF1008Z0002



Anti-surge breather with filter option has the same functions as the float control valves incl. rollover protection. Provides filtered air to prevent fuel contamination. Capable of environmental filtering to 3 micron.

- Tank fill rate to 1000 Lpm (264 US Gpm)

- Valve mounting 2" NPT male

HF1008Z0010

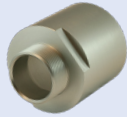


Hydrau-Flo[®] adaptors – black fuel filling valve

General Hydrau-Flo[®] adaptors

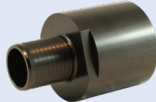
Black FFV to 2" NPT male

HF1102Z0001



Black FFV to 2" hose tail

HF1102Z0014 Aluminium



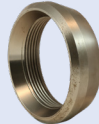
Black FFV to weld-in flush
mount C/W flange

HF1102Z0010



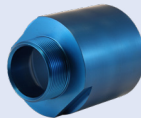
Black FFV to weld-on ring

HF1102Z0002



Black FFV to 2" BSPT male

MF102907



Black FFV to 2½" hose tail

HF1102Z0005 Steel



Black FFV to weld-on
stand pipe

HF1102Z0012 150mm

HF1102Z0013 310mm



Black FFV to 2" SAE code 61

MF225231



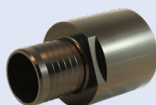
Black FFV to 2" hose tail

HF1102Z0004 Steel



Black FFV to 2½" hose tail

HF1102Z0015 Aluminium



Black FFV to aluminium
weld-on flange

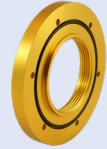
MF209304 Aluminium



Adaptors for specific equipment

Designed for use with
Komatsu[™] D375

MF102350



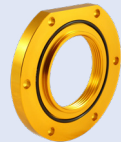
Designed for use with
John Deere[™] fuel tank

MF216647



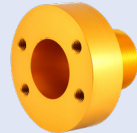
Designed for use with
CAT[™] fuel tank

HF1102Z0008



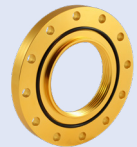
Designed for use with CAT[™]
D10R/D11R fuel inlet 2" NPT
male to 2" SAE Code 61

HF1103Z0003



Designed for use with CAT[™]
16M 12 bolt flange fuel tank

MF225232



MF215250

Designed for use with
Hitachi[™] EX 3600-6

MF215189



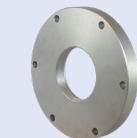
Designed for use with
Hitachi[™] EH 4000

MF103042



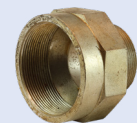
Designed for use with
Liebherr[™] 994/996

HF1102Z0007



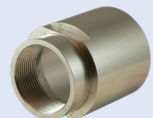
Designed for use with Liebherr[™]
994/996 black FFV to 2" NPT male

HF1102Z0009



Designed for use with Liebherr[™]
black FFV to 2½" NPT female

MF214441



Hydrau-Flo® adaptors – blue, red and gold fuel filling valves



General Hydrau-Flo® adaptors

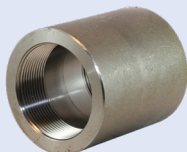
Weld in recessed adaptor
2" NPT female

HF1103Z0002



Socket 2" NPT

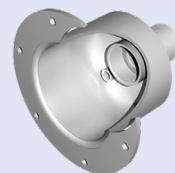
HF1011Z0002



Adaptors for specific equipment

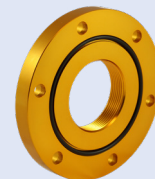
Hydrau-Flo® adaptor
for use with Komatsu™
830e/930e

HF1102Z0003



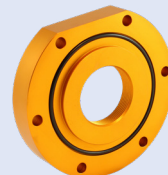
Hydrau-Flo® adaptor for
use with CAT™ D10R/D11R
fuel tank

HF1011Z0001



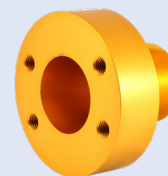
Hydrau-Flo® adaptor for
use with CAT™ D10R/D11R
fuel tank

HF1103Z0004



Hydrau-Flo® adaptor for use
with CAT™ D10R/D11R fuel
inlet 2" NPT male to 2"

HF1103Z0003



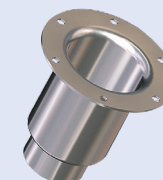
Hydrau-Flo® adaptor for
use with John Deere™
fuel Tank

MF216655

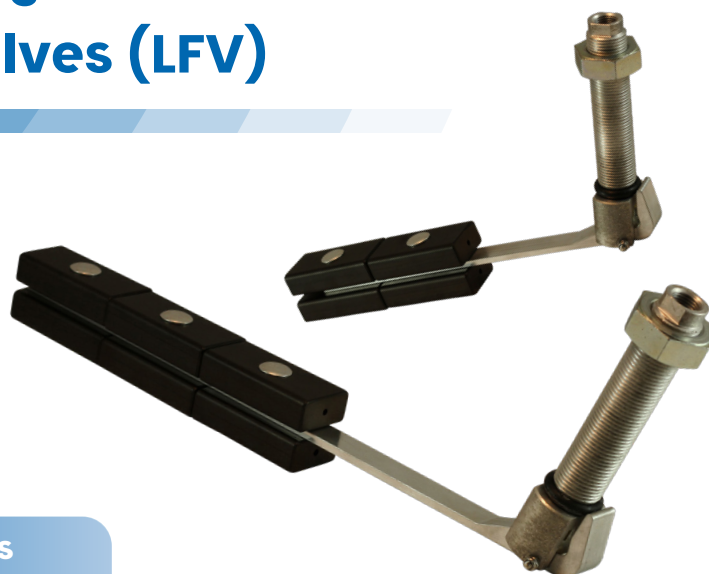


Hydrau-Flo® adaptor for use
with Wiggins™ ZNC3/ZNC4
bolt-on/weld-on flush mount

HF1103Z0006



Hydrau-Flo® adaptors – level float control valves (LFV)



Hydrau-Flo® level float adaptors

4 bolt bolt-on float and breather mount Socket 2" NPT 7/8" UNF female thread (lever float) 3/4" BSPT female thread

Breather std pipe HF101470001
Breather HF0304Z0003

HF1012Z0002

[Used with HF1012Z0001 or HF1103Z0001]



4 bolt bolt-on float mount 7/8" UNF female thread

HF1012Z0003

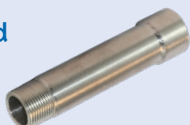
[Used with HF1012Z0001 or HF1103Z0001]



Breather stand pipe 3/4" BSPT male x 3/4" BSPT female thread

HF1014Z0001

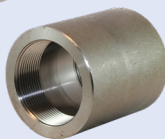
[Used with HF1012Z0002]



Weld on socket 2" NPT female thread

HF1011Z0002

[Used with HF1103Z0001]



4 bolt weld on float and breather mount

HF1012Z0001

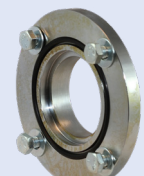
[Used with HF1012Z0002 or HF1012Z0003]



Breather 3/4" BSPT male thread

HF0304Z0003

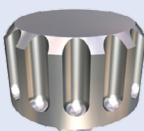
[Used with HF1014Z0001]



4 Bolt screw-in float and breather mount 2" male thread

HF1103Z0001 NPT MF221479 BSP

[Used with HF1012Z0002 or HF1012Z0003]



All our products are
backed by our **vast Weir**
services global network.



Hydrau-Flo® lines and connectors

3/8" Pilot line

Nipple reducing 3/8" BSPT
M x 1/4" BSPT male

MFHFS27-0604



TEE male 3/8" BSPT male

HF1204Z0012



1/4" plug used for plugging
unused pilot line port

HF1204Z0003



Swivel hose tail 3/8" BSPP
female x 3/8" hose tail

MFHF802-0606



Pilot line magnetic anchor,
suits 3/8" hose (16.5mm to
18mm hose OD) 68kg
(150 lbs) pull force

MF104073



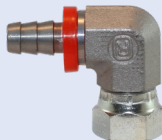
Nipple reducing 3/8" BSPT
male x 1/4" BSPT male

MFHFS27-0604



Elbow 90 female swivel
hose tail 3/8" BSPP female
x 3/8" hose tail

MFHF805-0606



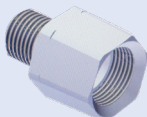
3/8" push on pilot line hose -
single wire braid

MFHHT16A



Adaptor 3/8" BSPT
female x 1/4" BSPT male

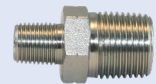
HF1204Z0013



1/2" Pilot line

Nipple reducing 1/2" BSPT
male x 1/4" BSPT male

MFHFS27-0804



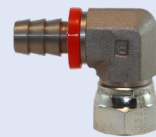
Swivel hose tail 1/2" BSPP
female x 1/2" hose tail

MFHF802-0808



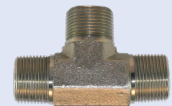
Elbow 90 deg female
swivel hose tail 1/2" BSPP
female x 1/2" hose tail

MFHF805-0808



TEE male 1/2" BSPT male

HFS50-080808



Pilot line magnetic anchor suit
1/2" hose (20mm to 22mm hose
OD) 68kg (150 lbs) pull force

MF104074



Nipple Reducing 1/8" JIC
male x 1/4" BSPT male

MFHFS7-0409



Elbow 90 deg male 1/8" JIC
male x 1/4" BSPT male

MFHFS8-0409



3/8" hose crimp coupling 1/8" JIC
male x 3/8" hose crimp

MFHFT204-0609



1/2" push on pilot line hose
single textile braid

HF1215Z0002



Dual fill components

Shuttle

HF1008P0100



Check valve 3/8" BSPT - F
Check valve 3/8" BSPT - F

HF1204Z0002

Used where 2x filling valves are connected to
1x float control valve. Includes balancing port



3/4" Breather Line

Nipple 3/4" BSPT male x 3/4" BSPT male

MFHFS27-1212



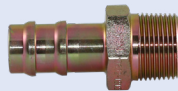
Swivel hose tail 3/4" BSPF female x 3/4" hose tail

MFHF802-1212



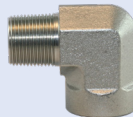
Hose tail 3/4" BSPT male x 3/4" hose tail

MF106409



Elbow 90 deg female / male 3/4" BSPT female x 3/4" male

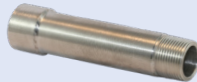
MF106408



Barrel nipple 3/4" BSPT male breather x 3/4" hose tail

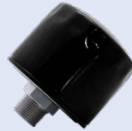
(Suit steel rain cap breather HF0304Z0003)

HF1014Z0001



Steel air breather 3 micron 3/4" NPT male

MF106040



Nylon air breather 3 micron 3/4" NPT male built in restriction indicator

MF106042

Replacement element

MF106043



Bracket weld-on / bolt-on 3/4" BSPT male

(Suit steel rain cap breather HF0304Z0003)

HF1014Z0002



Breather mounting flange 3/4" BSPT male to antisurge breather 2" NPT female

HF1008Z0003



Steel rain cap breather 3/4" BSPT male

HF0304Z0003



3/4" Push on pilot line hose single textile braid

MFHHP112



1/4" Exhaust Line

1/4" hose clamp single textile braid

MFRSC-4347



1/4" push on exhaust line hose single textile braid suit all green floats, valves and breathers

HF1215Z0004



Installation tools

Installation tools

Tool for installing
Hydrau-Flo® float control
valve – side entry

MF200629



Tool for installing
Hydrau-Flo® float fuel
filling (blue and black)
valve – side entry

MF201240



Tool for installing
Hydrau-Flo® fuel filling
red valve

MF202125



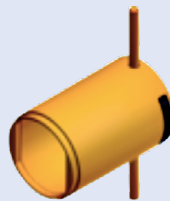
Tool for installing
Hydrau-Flo® fuel filling (blue
and black) valve – top entry

MF101023



Tool for installing
Hydrau-Flo® fuel
filling valve (orange)

MF252690



Tool for installing
Hydrau-Flo® fuel filling
valve (receivers)

MF252684



Tool for installing
Hydrau-Flo® fuel filling
valve receivers – side entry

MF252714



Tool kit for Hydrau-Flo®

MF103628



HYDRAU-FLO®
Solutions for Liquid Filling

Batch No. C216
Patent applications: 2010200426(AU), 2504239(CA),
WO/2010/081999(NZ), WO/2005/10199(ID), 7,793,682(US), 12/805,503(US)®
Patent Exposure Certificate -65C/ -85F to 43C/110F®

HYDRAU-FLO®
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WO/2010/081999(NZ), WO/2005/10199(ID), 7,793,682(US), 12/805,503(US)®
Patent Exposure Certificate -65C/ -85F to 43C/110F®



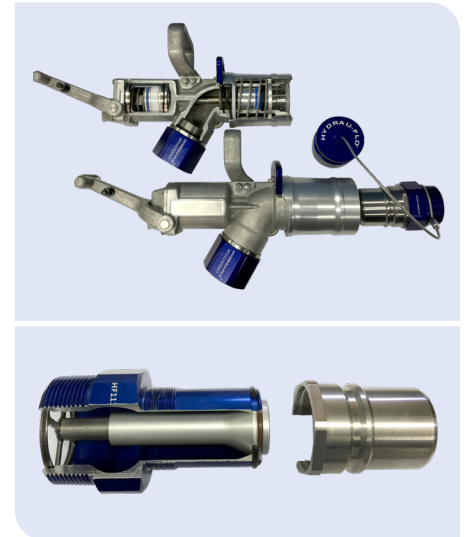
Hydrau-Flo® Technical specifications

	Pg
Nozzles and receivers	21
Fuel filling valves	22
Float control valves	26
Float control valves with barrel extensions	28
Lever floats and anti-surge breathers	30

Hydra-Flo® fuel filling valves Technical specifications

1000 Lpm	Fuel nozzle HF1113Z0008	Fuel receiver HF1113Z0005
Performance		
Maximum flow rate	1000 LPM (264 US GPM)	1000 LPM (264 US GPM)
Working pressure	8.62 Bar (125 PSI)	-
Burst pressure	17.24 Bar (250 PSI)	-
High shut off	0.93 bar (13.5 PSI)	-
Spring setting	-	0.21 Bar (3 PSI)
Dimensions		
Length	279 mm (11")	117.4 mm (4.66")
Weight	2.99 kg (6.6 lbs)	0.68 kg (1.5 lbs)
Swivel thread	2" NPT - Female	2" NPT - Male
A/F dimension	-	2.5"
Sleeve A/F dimension	-	2.0"
1500 Lpm	Fuel nozzle HF1113Z0007	Fuel receiver HF1113Z0006

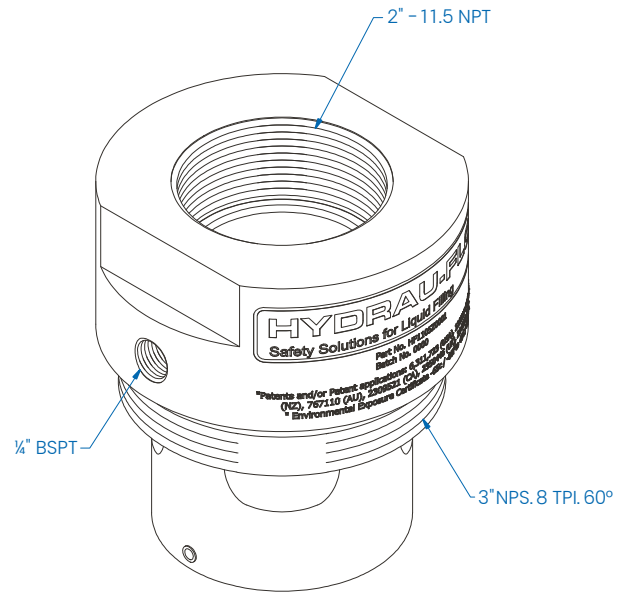
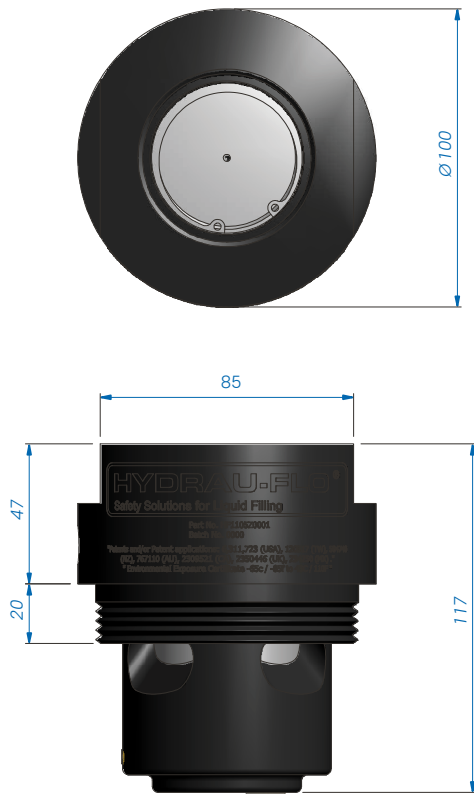
Performance		
Maximum flow rate	1500 LPM (396 US GPM)	1500 LPM (396 US GPM)
Working pressure	8.62 Bar (125 PSI)	-
Burst pressure	17.24 Bar (250 PSI)	-
Standard shut off	0.55 Bar (8 PSI)	-
Spring setting	-	0.21 Bar (3 PSI)
Dimensions		
Length	432 mm (17")	117.4 mm (4.66")
Weight	4.08 kg (9 lbs)	0.68 kg (1.5 lbs)
Swivel thread	2" NPT - Female	2" NPT - Male
A/F dimension	-	2.5"
Sleeve A/F dimension	-	2.0"



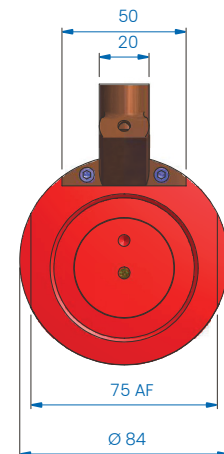
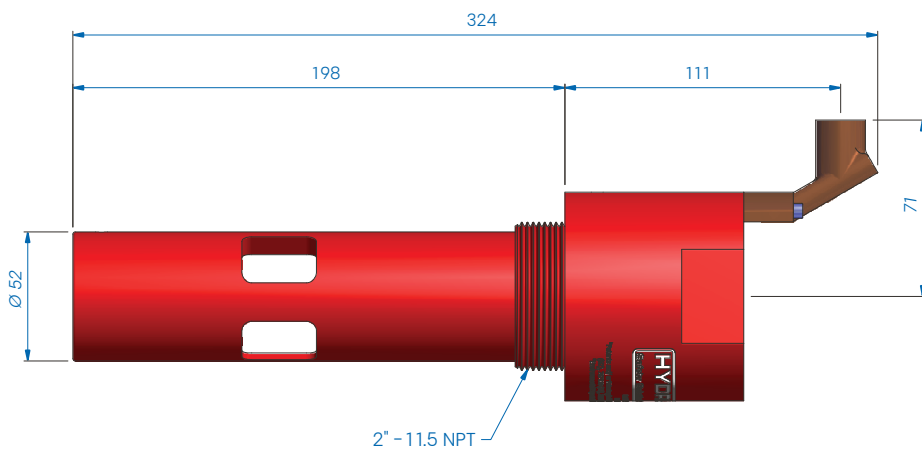
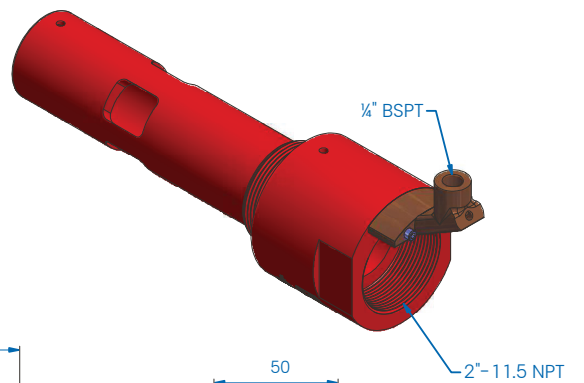
Top: Cross section of fuel nozzle and nozzle with receiver

Bottom: Cross section of fuel receiver

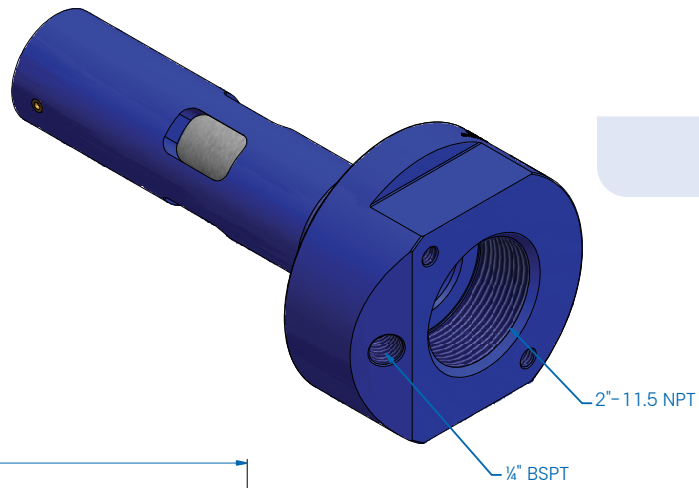
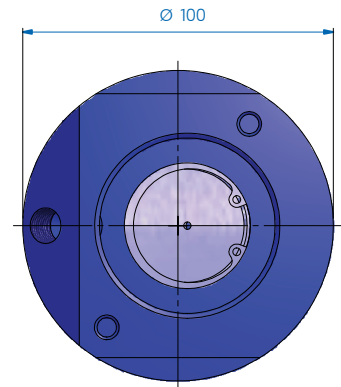
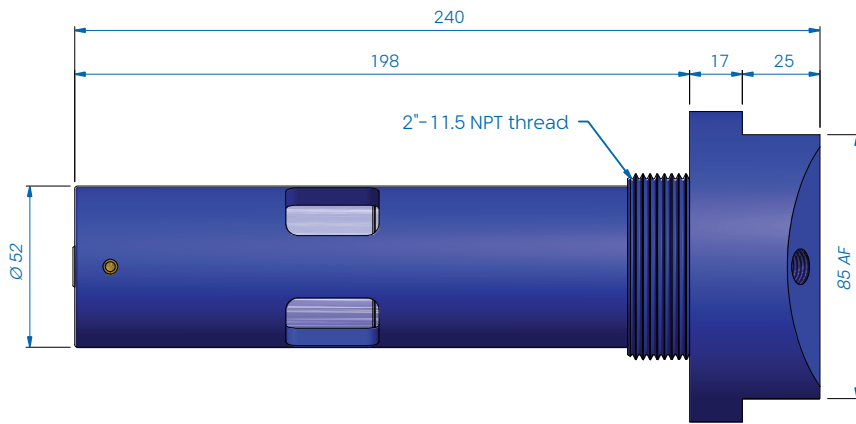
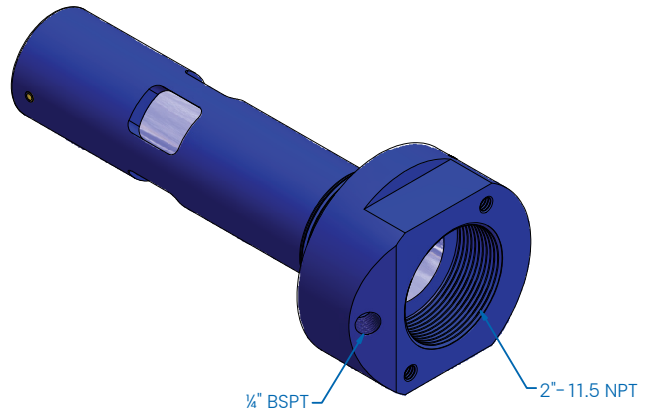
HF1005Z0001



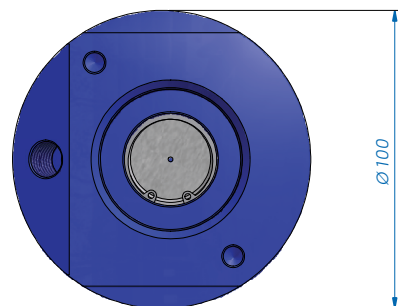
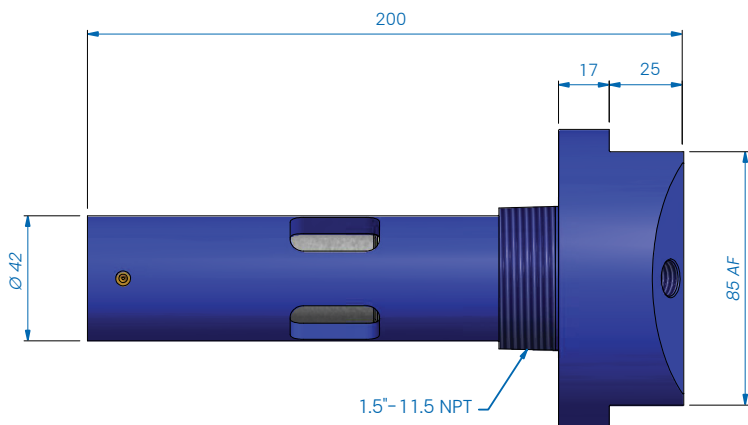
HF1105Z0002



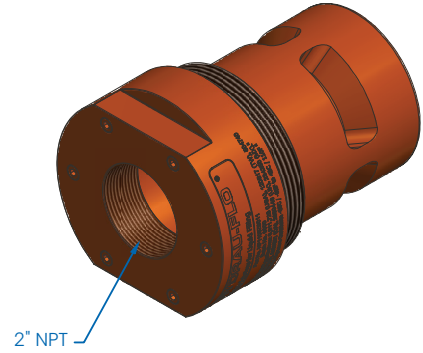
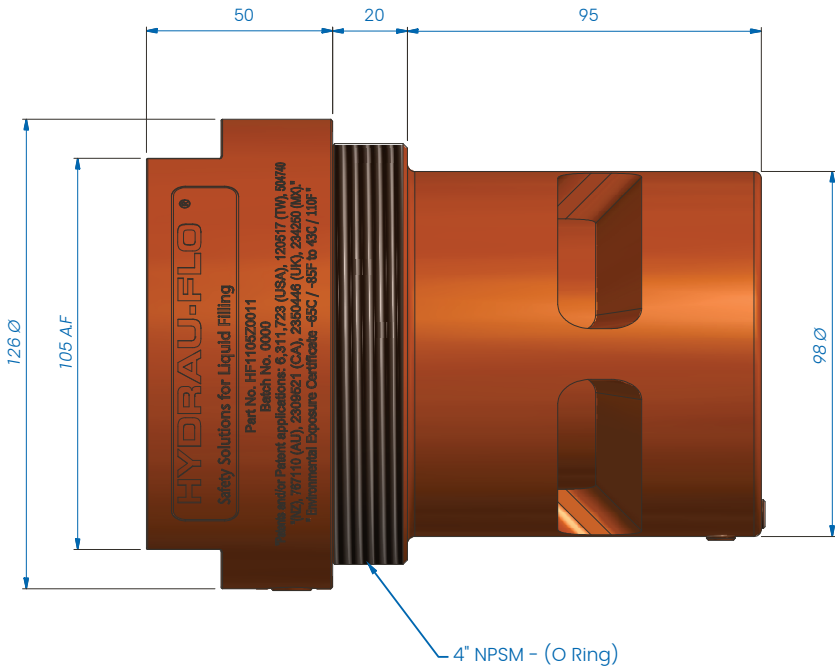
HF1 105Z0003



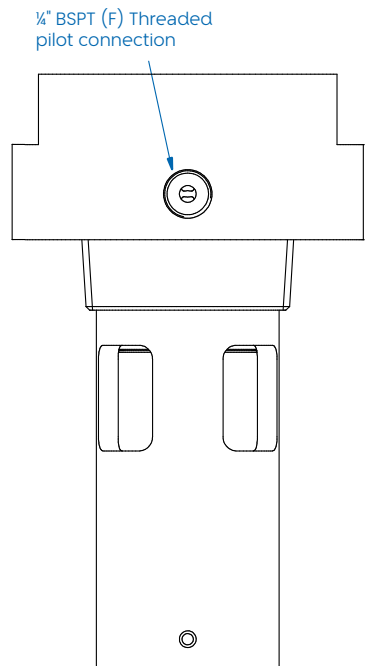
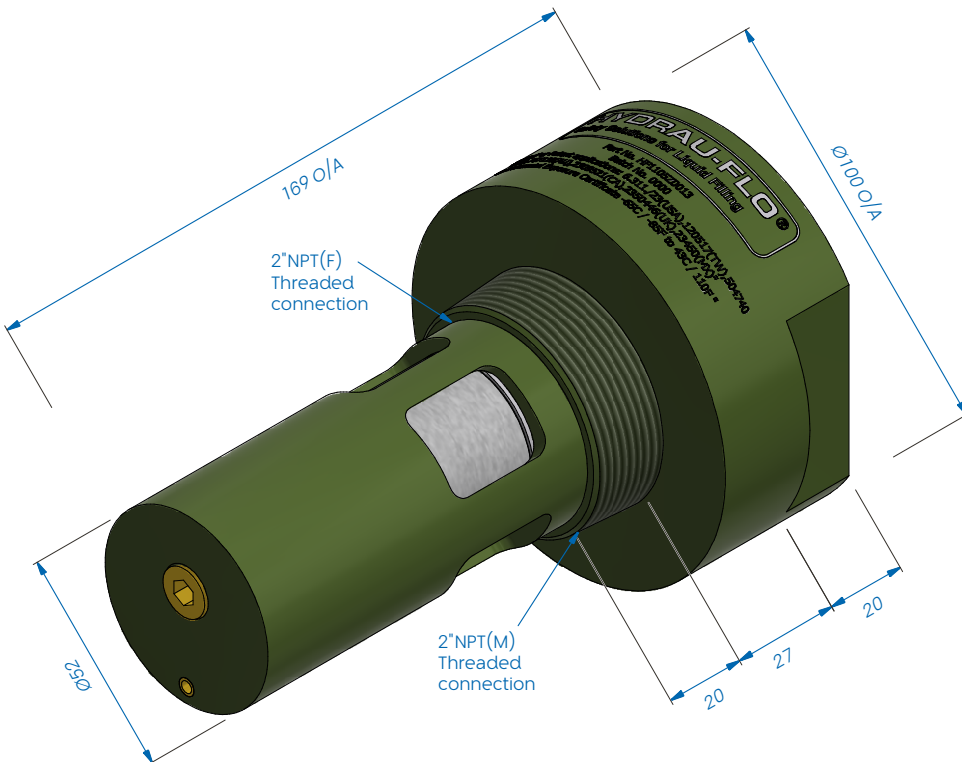
HF1 105Z0004



HF1105Z0011

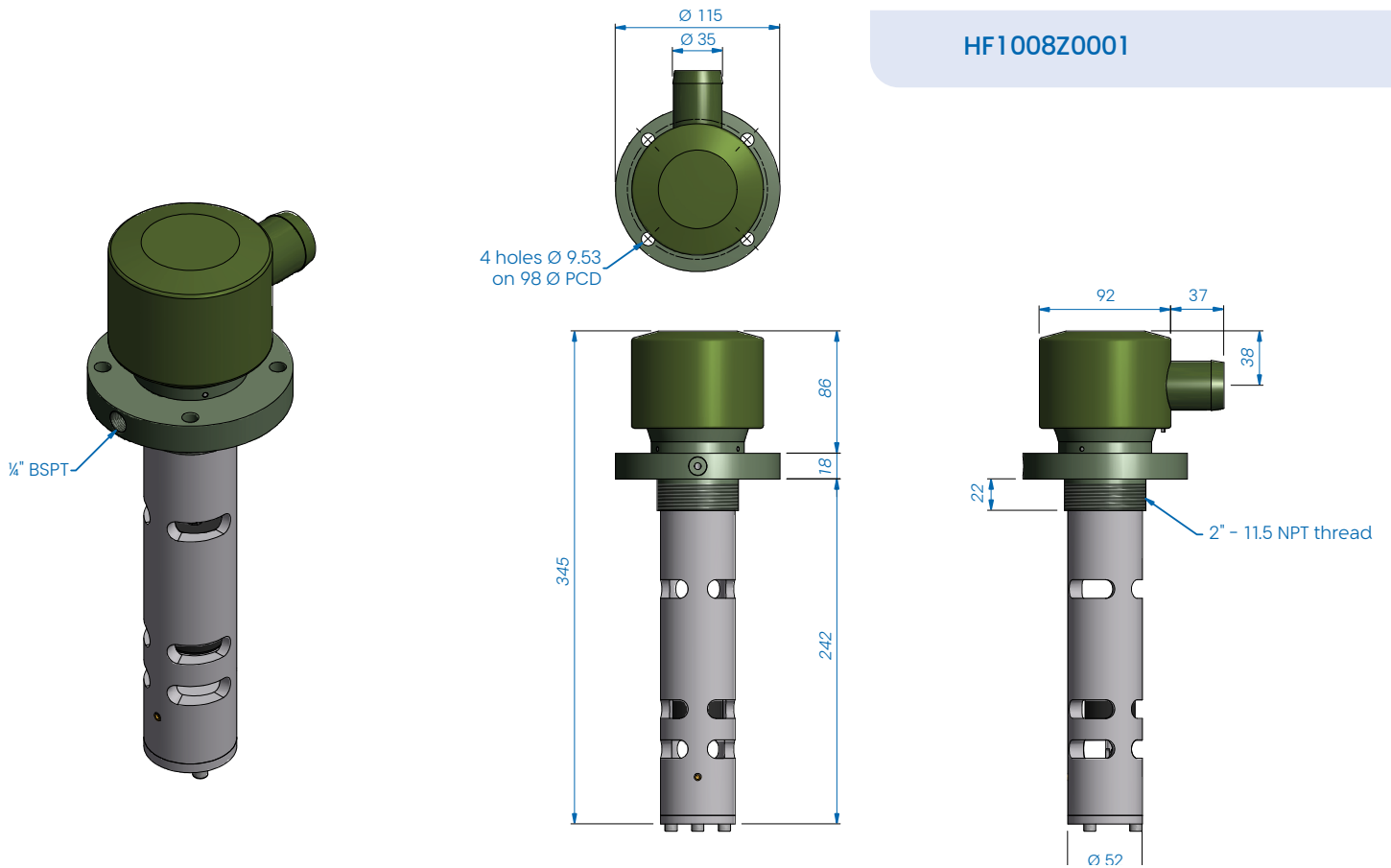


HF1105Z0013

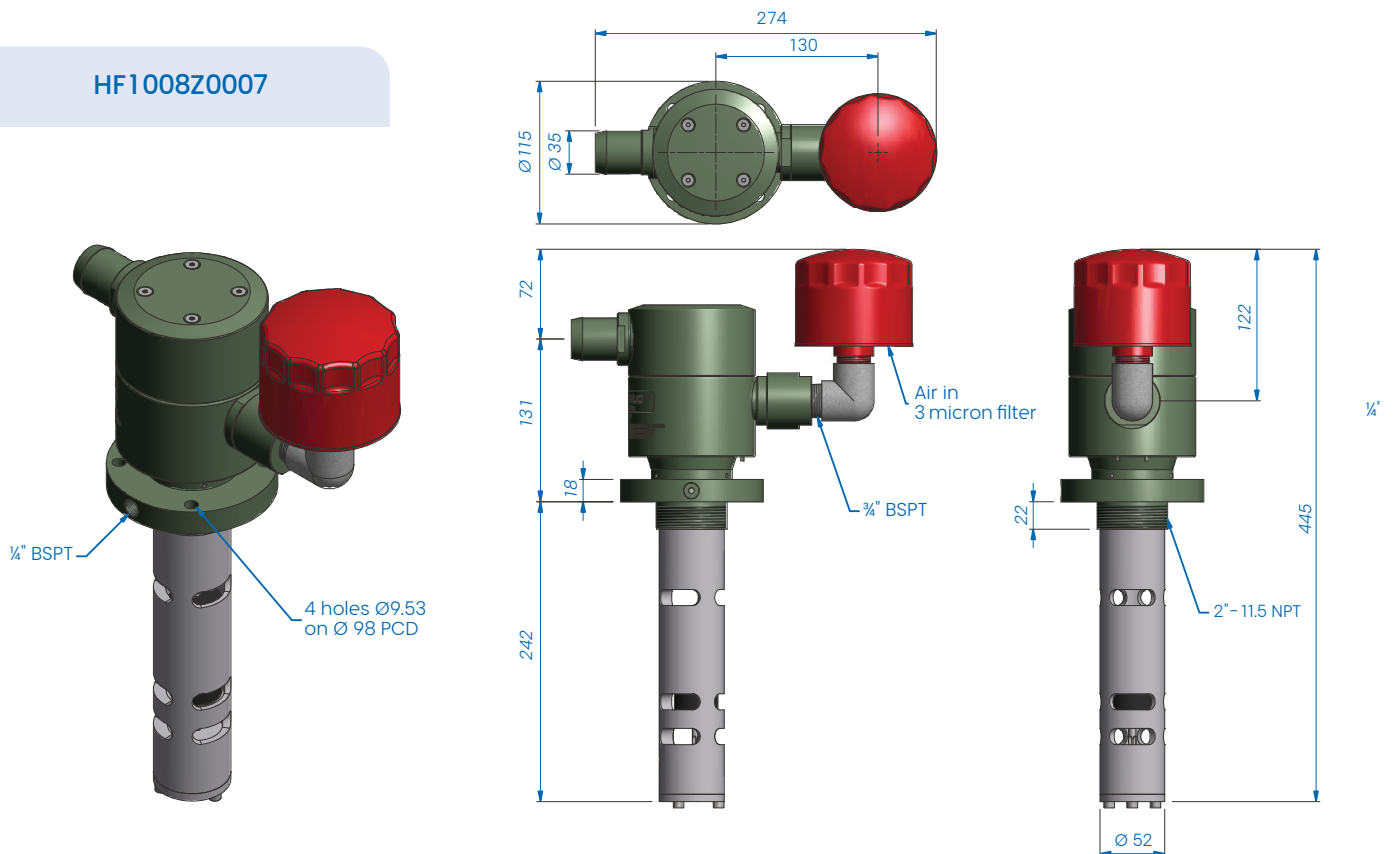


Hydra-Flo® Float control valves technical specifications

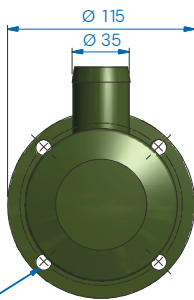
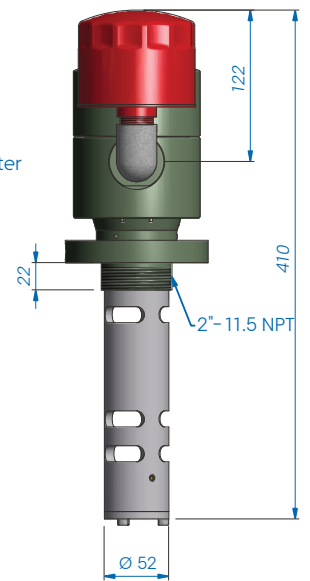
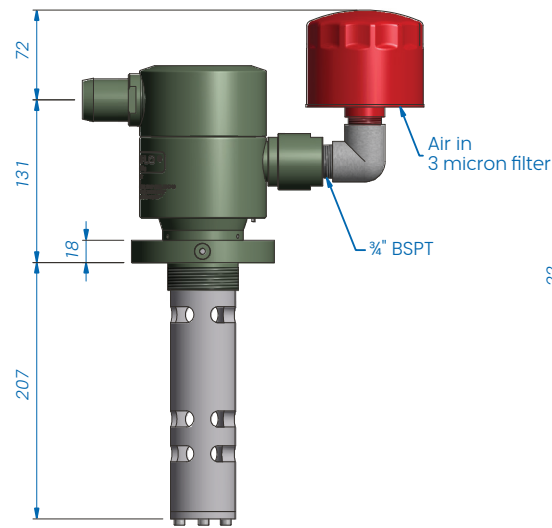
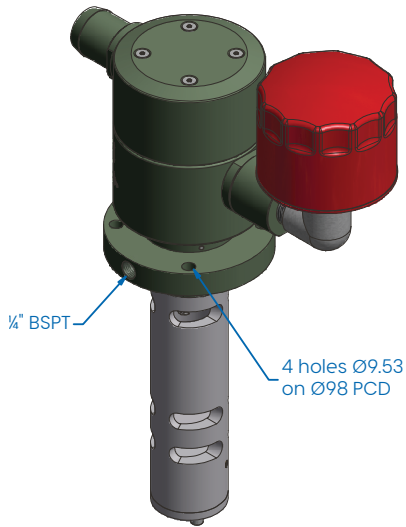
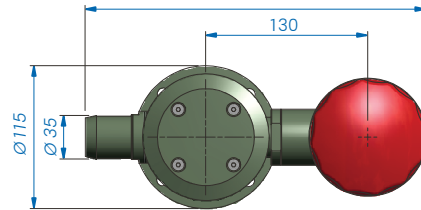
HF1008Z0001



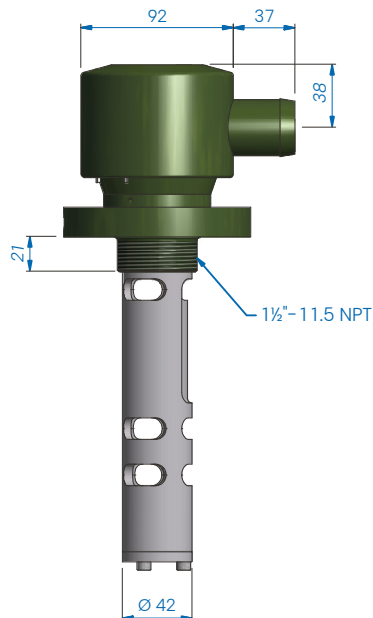
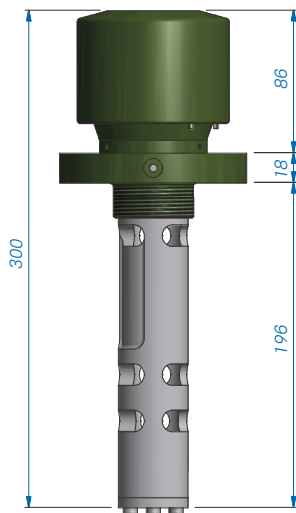
HF1008Z0007



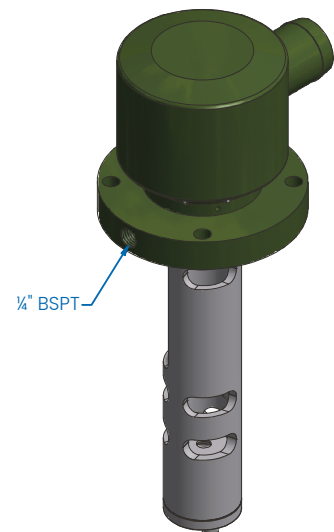
HF1008Z0008



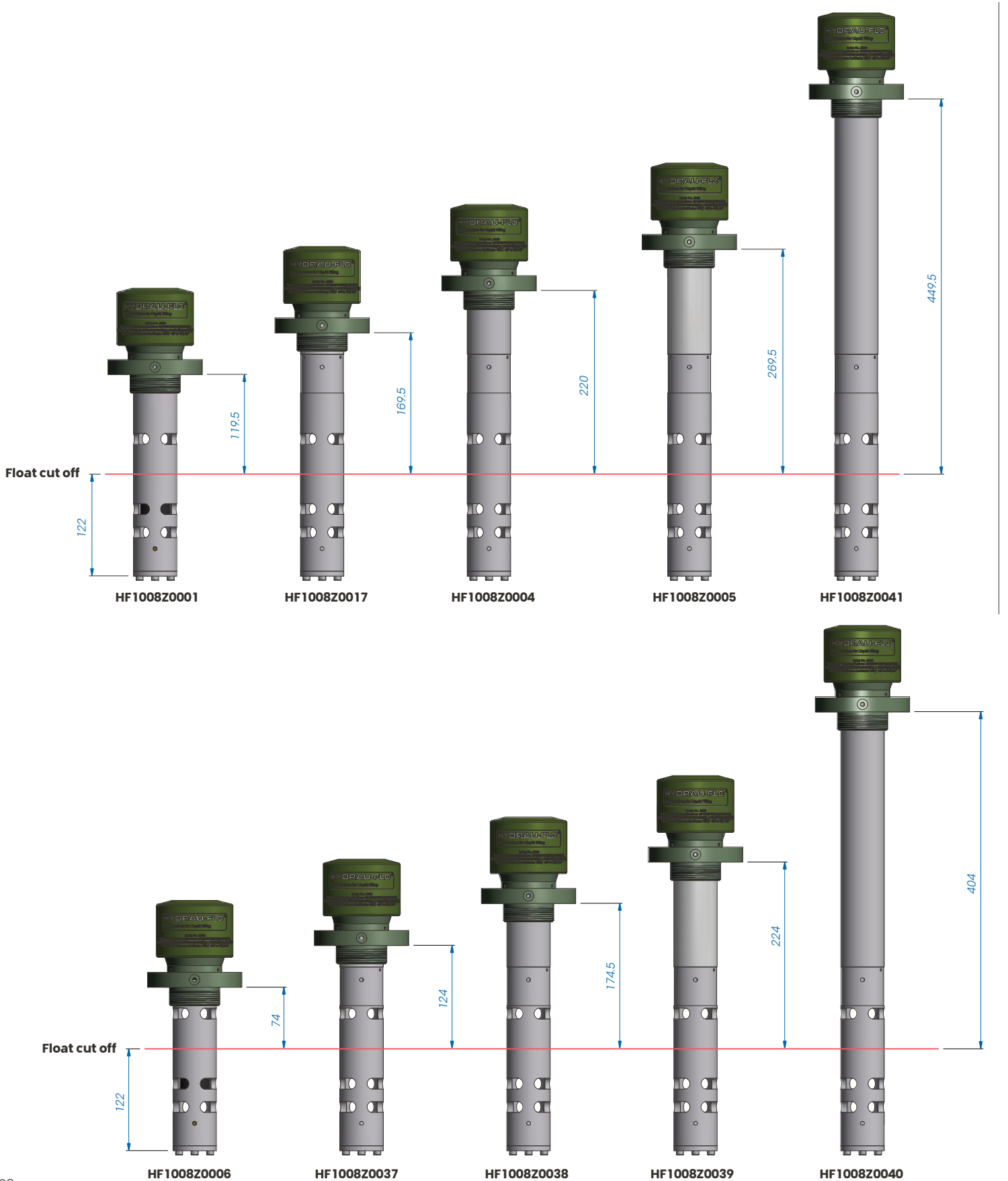
4 holes Ø9.53
on Ø98 PCD

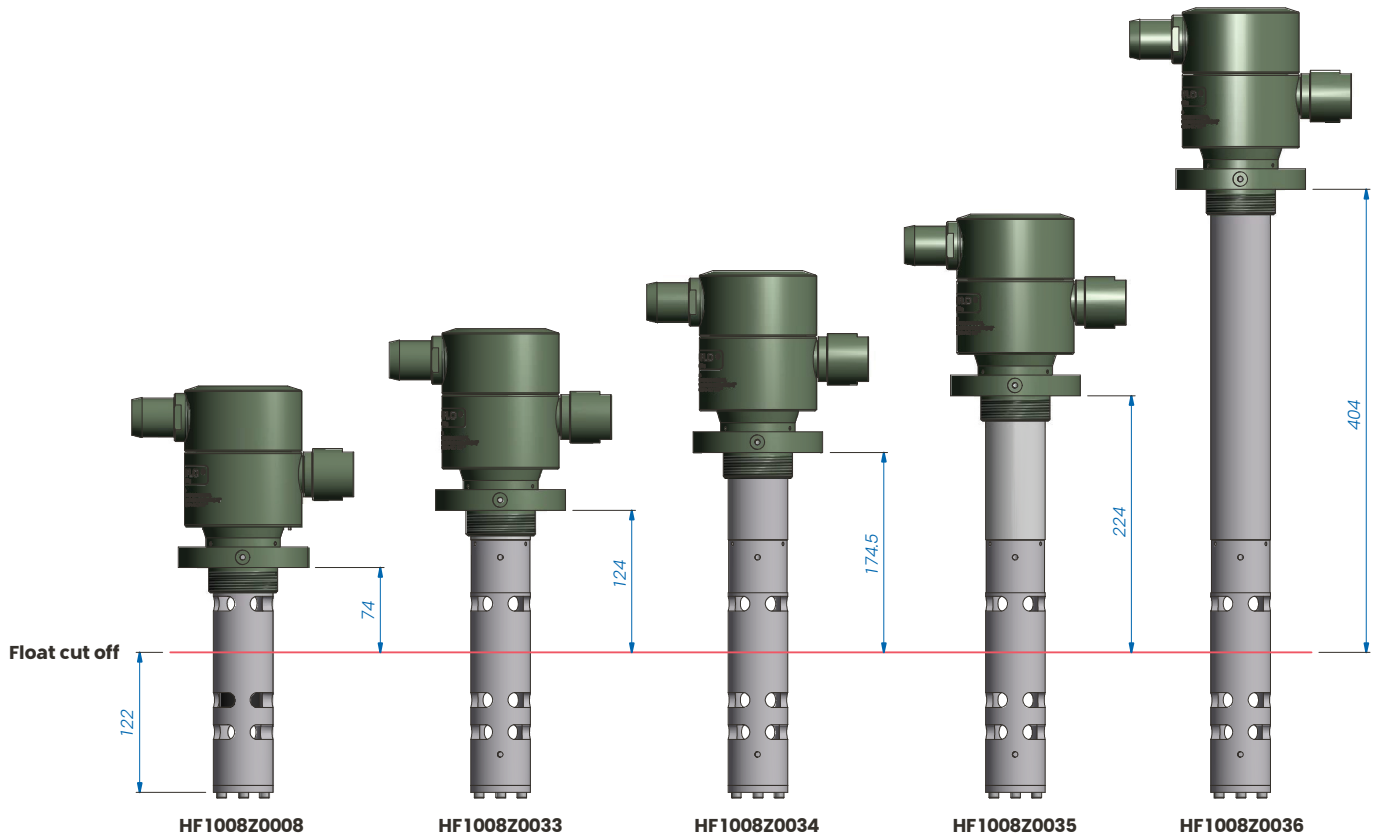
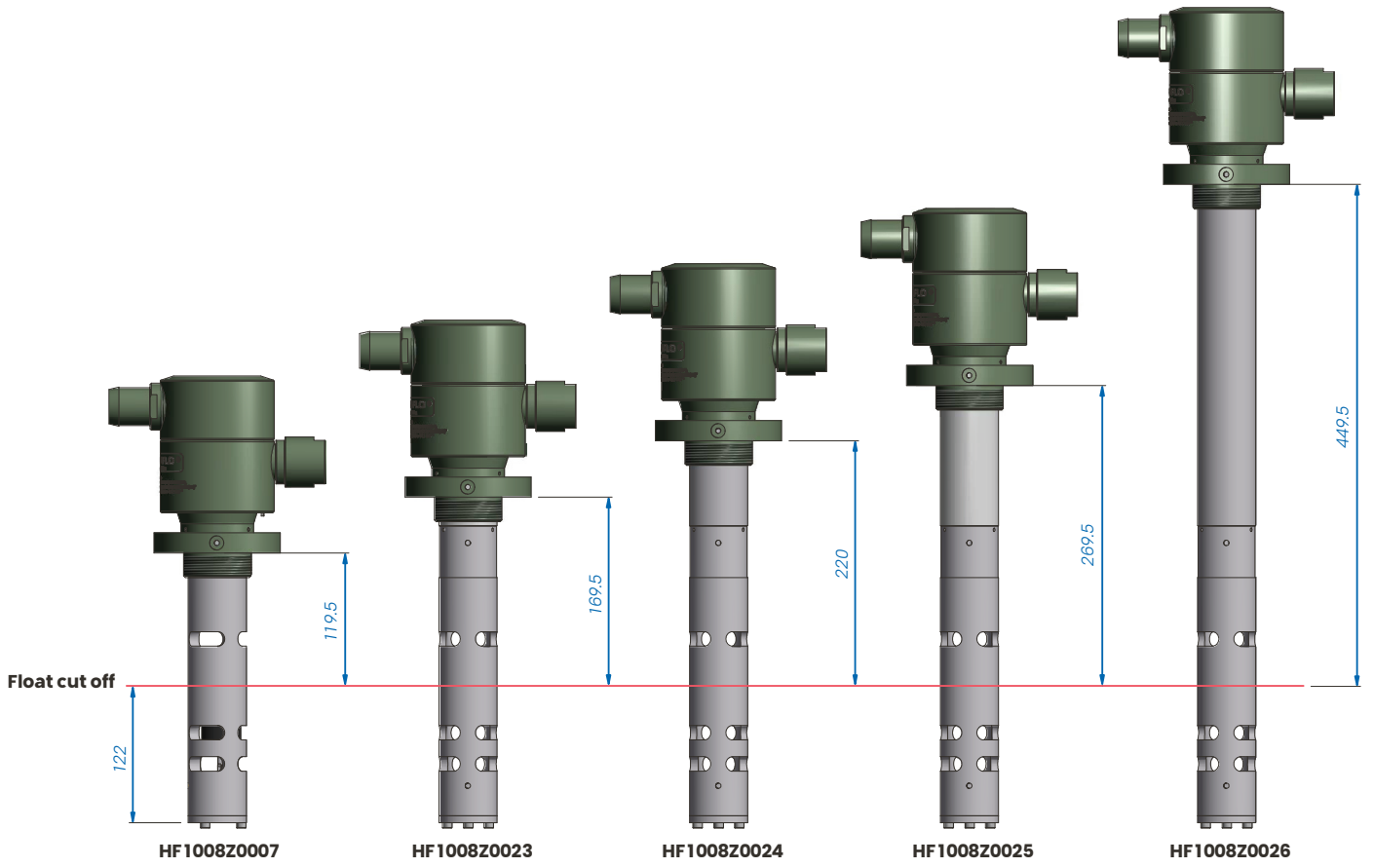


HF1008Z0009



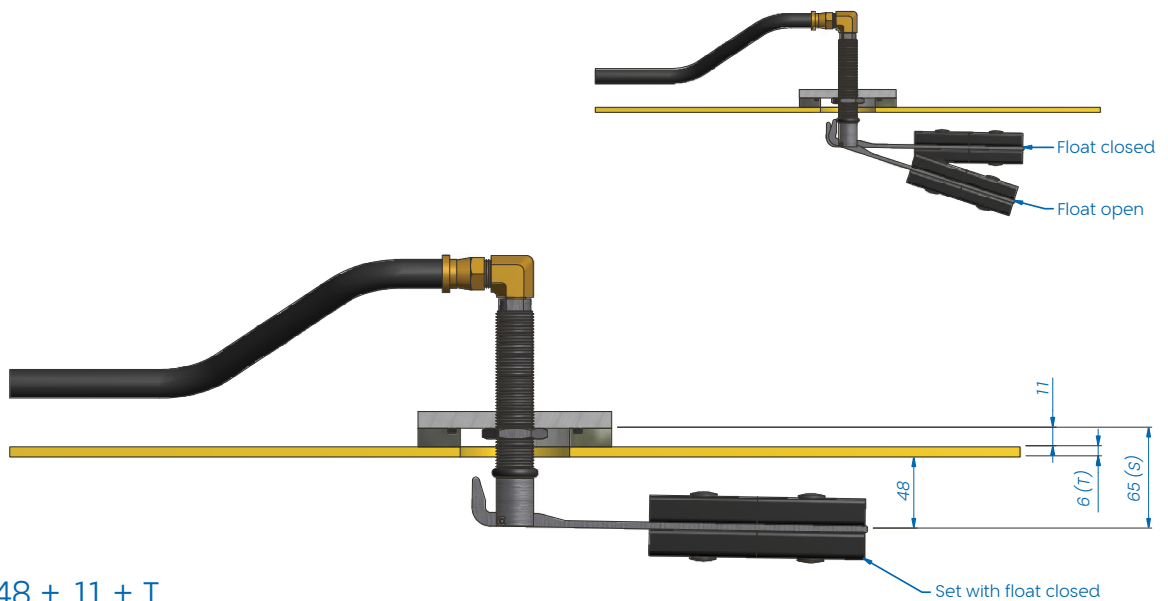
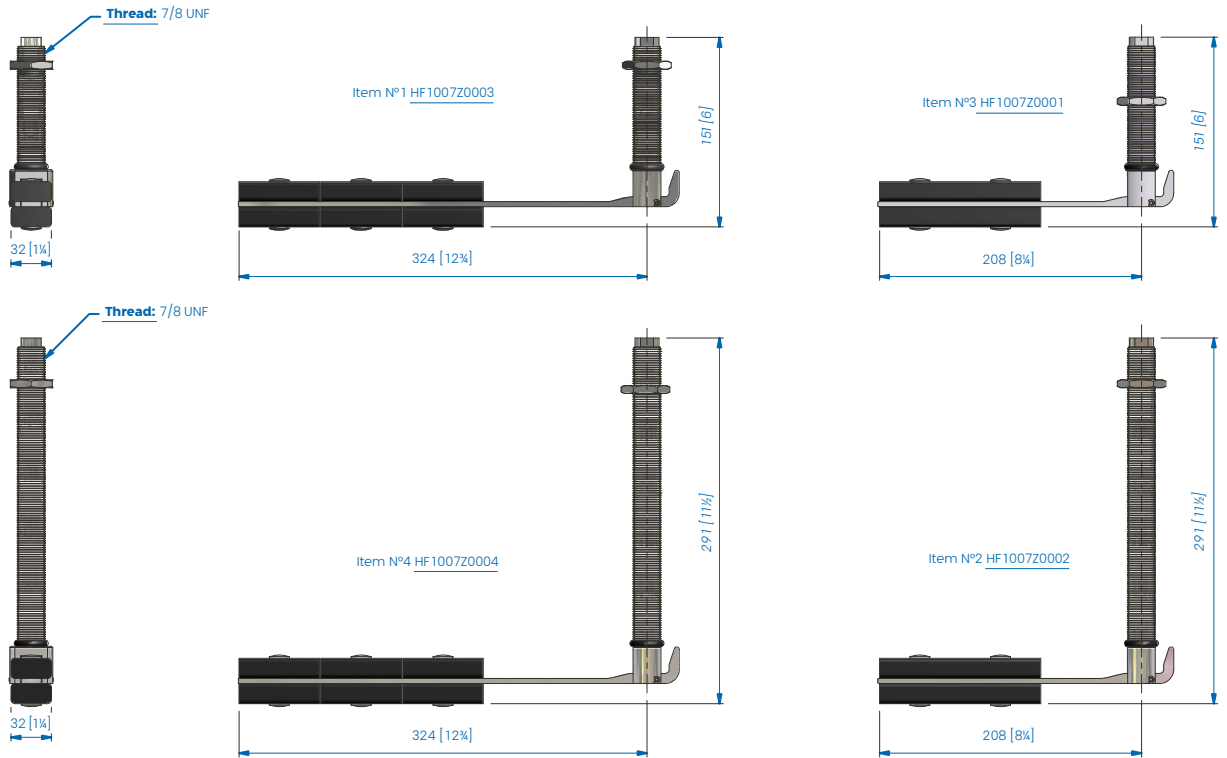
Hydra-Flo® Float control valves with barrell extensions





Hydra-Flo[®] Lever Floats and Anti-Surge Breathers

Lever floats

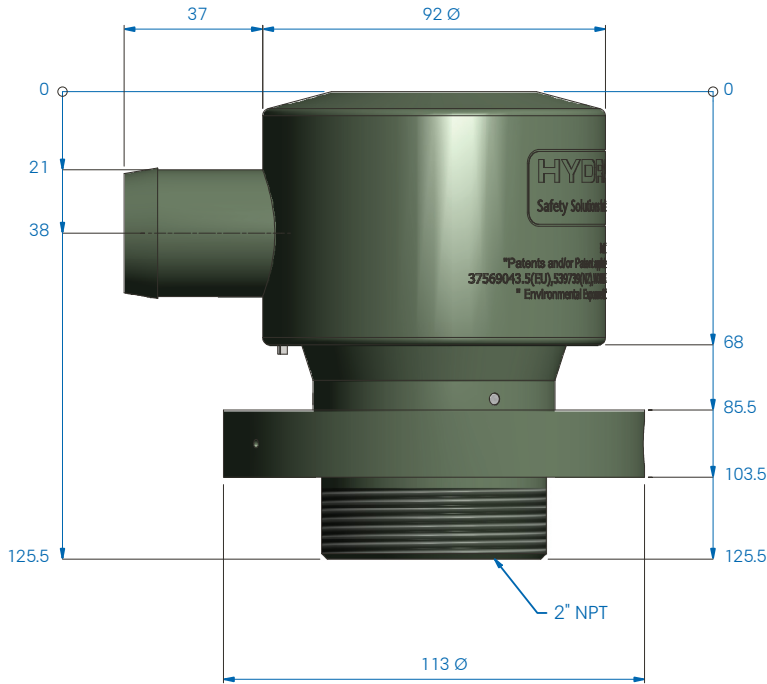


$$S = 48 + 11 + T$$

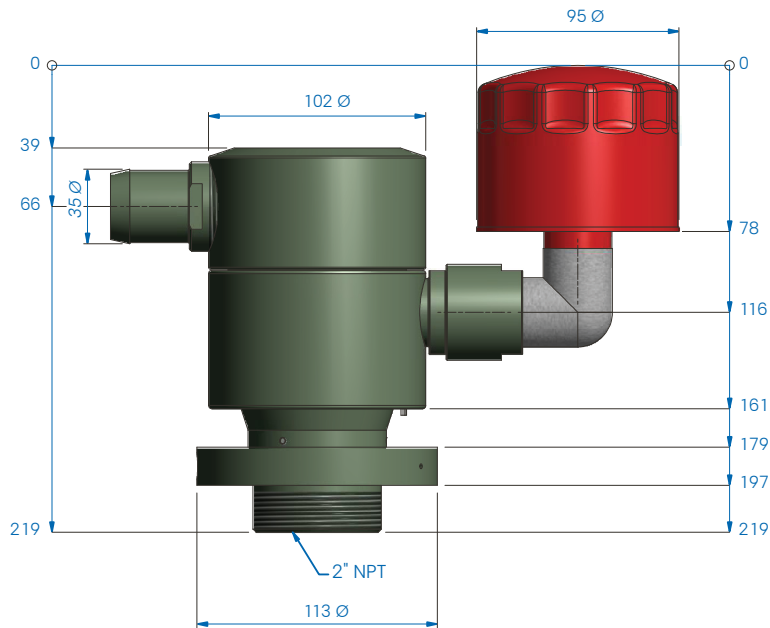
S = Setting distance
T = Thickness of fuel tank material

Eg. $48 + 11 + 6 = 65\text{mm}$

HF1008Z0002



HF1008Z0010



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