



Catalogue

Standard Range of Drytyt Dry Disconnect Couplings



CONTENTS

Drytyt Dry Disconnect Couplings

Catalogue

| | |
|---|----|
| Design Options: Drytyt Dry Disconnect Couplings | 3 |
| 56mm | |
| 56mm Drytyt Tank Unit | 5 |
| 56mm Drytyt Hose Unit | 7 |
| Selectivity System: 56mm | 9 |
| 70mm | |
| 70mm Drytyt Tank Unit | 11 |
| 70mm Drytyt Hose Unit | 13 |
| Selectivity System: 70mm | 15 |
| 105mm | |
| 105mm Drytyt Tank Unit | 17 |
| 105mm Drytyt Hose Unit | 19 |
| Selectivity System: 105mm & 119mm | 21 |
| 119mm | |
| 119mm Drytyt Tank Unit | 23 |
| 119mm Drytyt Hose Unit | 25 |
| Selectivity System: 105mm & 119mm | 21 |

Continued over



CONTENTS

Drytyt Dry Disconnect Couplings

Catalogue

164mm

| | |
|---------------------------|----|
| 164mm Drytyt Tank Unit | 27 |
| 164mm Drytyt Hose Unit | 29 |
| Selectivity System: 164mm | 31 |

Accessories

| | |
|---|----|
| Rubber Dust Caps and Plugs | 32 |
| Pressure-Tight Caps for Drytyt Tank Units | 33 |

Appendix

| | |
|--|----|
| Bolt Torque Guide & Step Loading Procedure | 37 |
| Client Responsibilities | 39 |
| Fort Vale Worldwide | 41 |



Drytyt Dry Disconnect Couplings

Design Options

Function

Drytyt dry disconnect tank units and hose units provide a fast and safe bulk liquid transfer system where product spillage is not permitted. Drytyt couplings are made to industry standards and are fully compatible with Todo®, Mann-Tek® and Avery Hardoll® couplings.

All industry accepted selectivity systems are available to prevent accidental mixing of cargoes.

Design Options

The design options below are available on our standard range of dry disconnect couplings.

Nominal Size

- 56mm
- 70mm
- 105mm
- 119mm
- 164mm



Threaded Connection

- BSP
- NPT
- NPSL

Flanged Connection

- Compatible with a range of bottom discharge valve assemblies
- A selection of drilling patterns is available

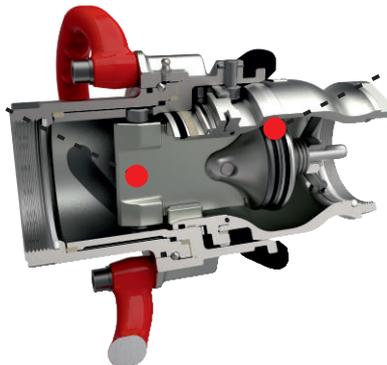


Contact Parts

316 stainless steel

Special service conditions:

- High nickel alloys
- 904L
- Inconel®
- Titanium



Main Seal

Viton as standard

Special service conditions:

A selection of seal materials is available, refer to the next page

Selectivity

All industry accepted selective positions are available

Please refer to our Coupling Selectivity data sheets



Security

- Colour coded
- Your logo



Drytyt Dry Disconnect Couplings

Design Options

Seal Options

The working temperature range of the seal material can change the design temperature limits of the Drytyt coupling. Please refer to the table below:

| Seal Code | Seal Material | Seal Temp.Range |
|-----------|----------------------|-----------------|
| 915/54XXB | Butyl | -30°C to +120°C |
| 915/54XXE | EPDM | -20°C to +150°C |
| 915/54XXF | Fortyt * Note | -55°C to +200°C |
| 915/54XXN | Nitrile | -20°C to +100°C |
| 915/54XXP | Perfluoroelastomer | -15°C to +200°C |
| 915/54XXQ | Viton FDA approved | -20°C to +200°C |
| 915/54XXV | Viton | -20°C to +200°C |

Related Parts

We recommend our range of compatible pressure-tight caps for tank units. Please refer to the Pressure-Tight Caps data sheet.

We also supply a selection of rubber dust caps and plugs.

Please contact us for more information.



56mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B560A00



Specification

Nominal size

56mm

Inlet connection

1" BSP

Outlet/process connection

56mm

Properties

Fire-safe design. Non-protruding poppet

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Poppet O ring: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 0.7 Kg
 Design Pressure (MAWP): 25 Bar
 Test Pressure: 37.5 Bar
 Max. Coupling Pressure: specified by the hose unit
 Design Temp. Min/Max: -40°C / 200°C (metal parts)
 Design Temp. Min/Max: -20°C / 200°C (Viton O ring)

NOTE: The working temperature of the poppet O ring can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 14432

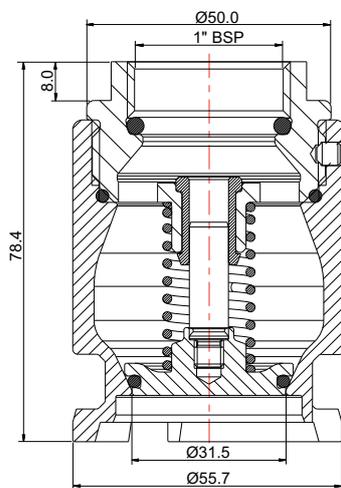
Range

| Description | Part No. |
|--|--------------|
| 1" BSP inlet, Viton seal, no selectivity | 376V/B560A00 |

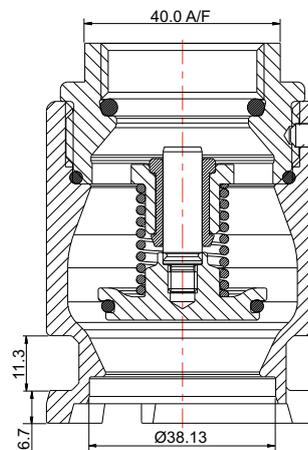
Related Parts

| Description | Part No. |
|-----------------------------------|--------------|
| 56mm pressure-tight cap | 915/5410X |
| 56mm/1" BSP hose unit, Viton seal | 895V/B560A00 |

Section View



CLOSED POSITION



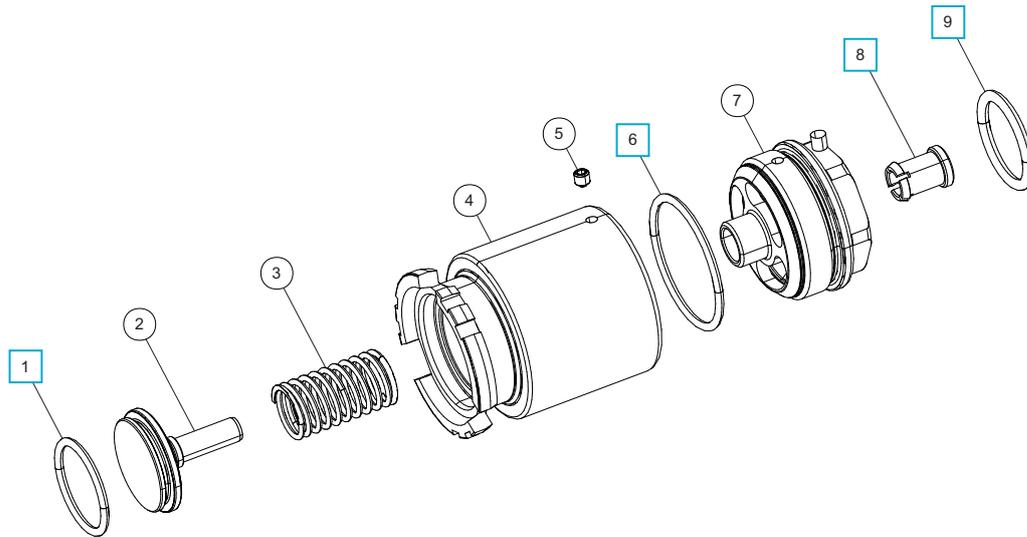
OPEN POSITION



56mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B560A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|---|-------------------------------------|
| 1 | Viton poppet O ring *Note | ORB121V <input type="checkbox"/> |
| 2 | Poppet assembly | 376/0563 |
| 3 | Poppet spring | 5104-805 |
| 4 | 56mm body (no selectivity) *Note | 376/B561A00 |
| 5 | Sockethead screw | 5121-001 |
| 6 | PTFE O ring | ORB130P0 <input type="checkbox"/> |
| 7 | 1" BSP body half | 376/B566 |
| 8 | Guide bush | 376/0566/1 <input type="checkbox"/> |
| 9 | PTFE O ring | ORB215P0 <input type="checkbox"/> |

NOTE: The tank unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 376X/B560XSK |

X = The seal material and inlet type change the Part No.



56mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B560A00



Specification

Nominal size

56mm

Inlet connection

1" BSP with swivel

Outlet connection

56mm

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Main seals: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 1.7 Kg
 Design Pressure (MAWP): 25 Bar
 Test Pressure: 43.8 Bar
 Max. Coupling Pressure: 7 Bar
 Design Temp. Min/Max: -40°C / 200°C (**metal parts**)
 Design Temp. Min/Max: -20°C / 200°C (**Viton seals**)

NOTE: The working temperature of the hose unit seals can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 12516-2

Range

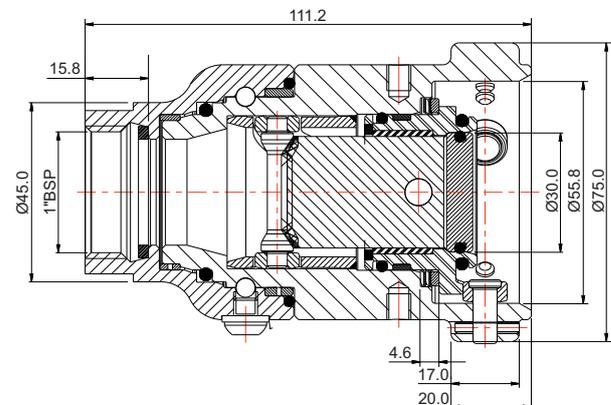
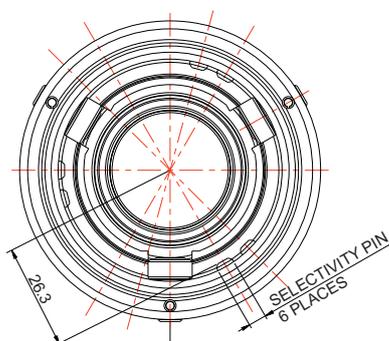
| Description | Part No. |
|--|--------------|
| 1" BSP inlet, Viton seal, no selectivity | 895V/B560A00 |

Related Parts

| Description | Part No. |
|---------------------------------------|--------------|
| 56mm/1" BSP tank unit, Viton seal | 376V/B560A00 |
| Pressure-tight cap for 56mm tank unit | 915/5410X |

Section View

Shows the selectivity pin position

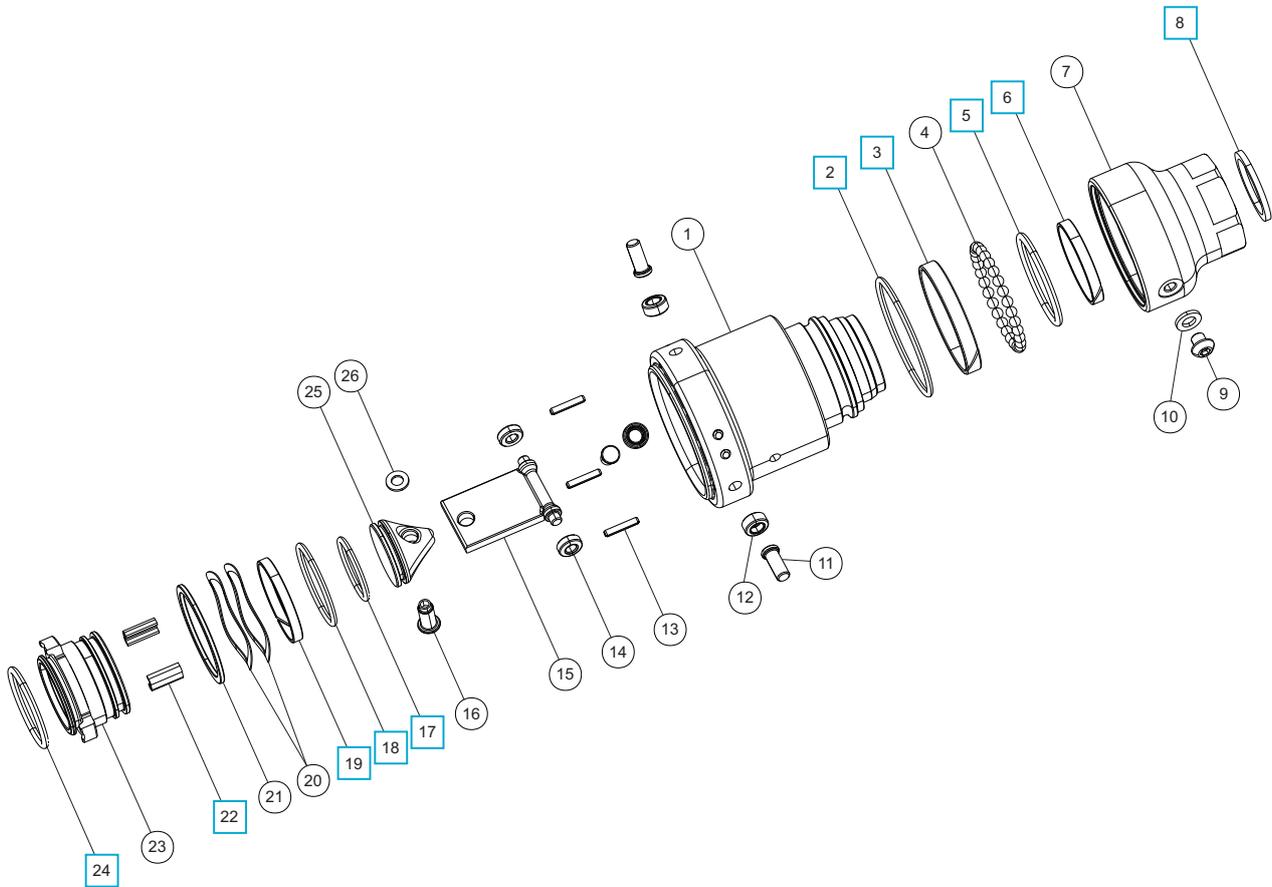




56mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B560A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|----------------------------------|-------------------------------------|
| 1 | 56mm body (no selectivity) *Note | 895/B56100 |
| 2 | Fortyt O ring | ORB137F0 <input type="checkbox"/> |
| 3 | PTFE front bearing | 895/5603 <input type="checkbox"/> |
| 4 | Ball bearing (30) | 10145SS |
| 5 | Viton O ring *Note | 5005-110 <input type="checkbox"/> |
| 6 | PTFE rear bearing | 895/5605 <input type="checkbox"/> |
| 7 | 1" BSP swivel body | 895/5601 |
| 8 | PTFE rear seal | 895/B563/1 <input type="checkbox"/> |
| 9 | M6 button screw | 5111-613 |
| 10 | M6 spring washer | 5113-008 |
| 11 | Spindle housing bolt (3) | 895/B564 |
| 12 | Roller (3) | 895/B566/1 |
| 13 | Roll pin (3) | 5128-071 |
| 14 | Roller (2) | 895/B566 |
| 15 | Roller spindle assembly | 895/B568 |
| 16 | Pivot pin | 895/B567/1 |
| 17 | Viton O ring *Note | 5005-552 <input type="checkbox"/> |
| 18 | Viton O ring *Note | 5005-956 <input type="checkbox"/> |
| 19 | Poppet bearing | 895/B562 <input type="checkbox"/> |
| 20 | Wave spring (2) | 5104-201 |

Parts List

| Item | Description | Part No. |
|------|-------------------------|--------------------------------------|
| 21 | Backing washer | 895/B563 |
| 22 | Slide strip (2) | 895/B568/4 <input type="checkbox"/> |
| 23 | Poppet housing assembly | 895/B565 |
| 24 | Viton O ring *Note | ORM033030VR <input type="checkbox"/> |
| 25 | Poppet | 895/B567 |
| 26 | 5mm plain washer | 5113-015 |

NOTE: The hose unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 895X/B560XSK |

X = The seal material and inlet type change the Part No.



Dry Disconnect Coupling Selectivity: 56mm

Selectivity Systems

Fort Vale 56mm Drytyt couplings are compatible with Todo® and Mann-Tek® couplings and are available with these selectivity systems to prevent accidental mixing of cargoes:

| Selectivity | Compatible | Refer to |
|-------------|------------------------------|----------------------|
| 5 Position | Fort Vale®, Todo®, Mann-Tek® | Figure 1 and Table 1 |
| 10 Position | Fort Vale®, Todo®, Mann-Tek® | Figure 1 and Table 2 |

Figure 1: 56mm Tank Unit and 56mm Hose Unit - 5 and 10 Position Selectivity

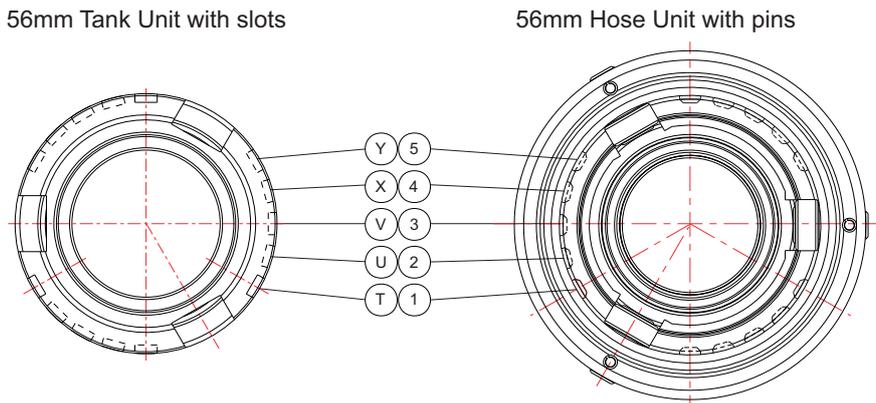


Table 1: 5 Position Selectivity

| Pin/Slot Position | | | | |
|-------------------|---|---|---|---|
| T | U | V | X | Y |

Table 2: 10 Position Selectivity

| Pin/Slot Position | | | | | | | | | |
|-------------------|----|----|----|----|----|----|----|----|----|
| 12 | 13 | 14 | 15 | 23 | 24 | 25 | 34 | 35 | 45 |

CAUTION: A hose unit with one pin (from 5 position selectivity) can engage with a tank unit with two slots (from 10 position selectivity). Check the compatibility of the tank and hose units carefully before you connect them.

How to Order

To order a 56mm Drytyt tank unit or hose unit with selectivity, select the slot/pin position and add the letter or number code to the end of the tank/hose unit part number. Please refer to the example below:

e.g. tank unit - 5 position selectivity: 376X/B560XT
 tank unit - 10 position selectivity: 376X/B560X45

e.g. hose unit - 5 position selectivity: 895X/B560AT
 hose unit - 10 position selectivity: 895X/B560A45

NOTE: The seal material and inlet connection change the “X” values in the part numbers above.



70mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B700A00



Specification

Nominal size

70mm

Inlet connection

2" BSP

Outlet/process connection

70mm

Properties

Fire-safe design. Non-protruding poppet

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Poppet O ring: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

| | |
|-------------------------|---------------------------------------|
| Weight: | 1.2 Kg |
| Design Pressure (MAWP): | 25 Bar |
| Test Pressure: | 37.5 Bar |
| Max. Coupling Pressure: | specified by the hose unit |
| Design Temp. Min/Max: | -40°C / 200°C (metal parts) |
| Design Temp. Min/Max: | -20°C / 200°C (Viton O ring) |

NOTE: The working temperature of the poppet O ring can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 14432

Range

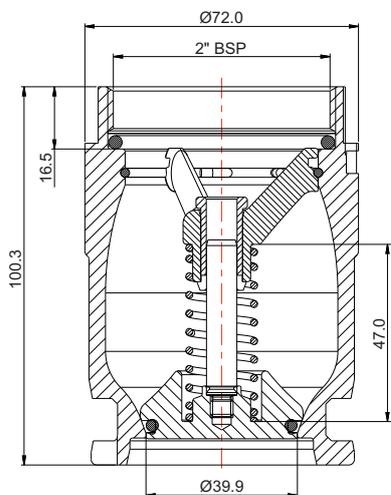
| Description | Part No. |
|--|--------------|
| 2" BSP inlet, Viton seal, no selectivity | 376V/B700A00 |
| Flanged inlet, no selectivity *Note | 376V/B700X00 |

NOTE: Different flange specifications are available. Please contact Fort Vale.

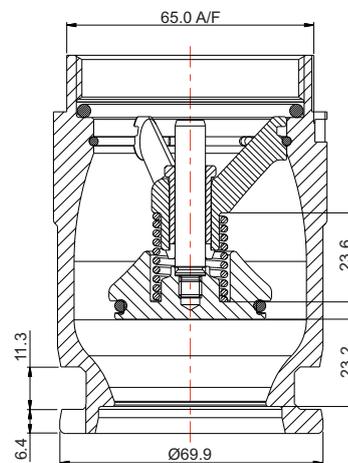
Related Parts

| Description | Part No. |
|-----------------------------------|--------------|
| 70mm pressure-tight cap | 915/5420X |
| 70mm/2" BSP hose unit, Viton seal | 895V/B700A00 |
| 70mm rubber dust cap | 915/5172 |

Section View



CLOSED POSITION



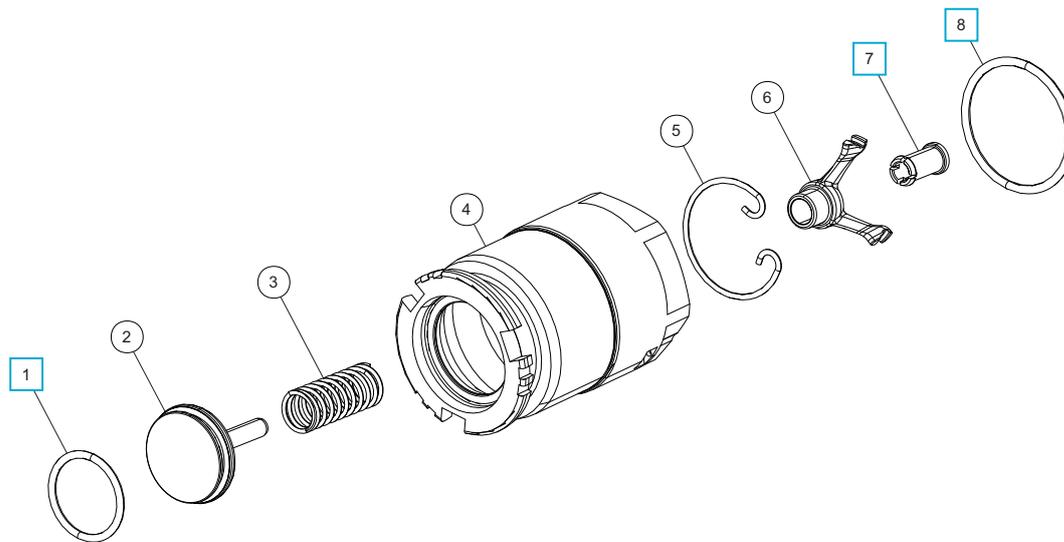
OPEN POSITION



70mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B700A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|---|-------------------------------------|
| 1 | Viton poppet O ring *Note | 5005-171 <input type="checkbox"/> |
| 2 | Poppet assembly | 376/B703 |
| 3 | Poppet spring | 5104-800 |
| 4 | 70mm body (no selectivity) *Note | 376/B701A00 |
| 5 | Snap ring | 5120-081 |
| 6 | Spider | 376/B702 |
| 7 | Guide bush | 376/0702/2 <input type="checkbox"/> |
| 8 | PTFE O ring | ORB832P0 <input type="checkbox"/> |

NOTE: The tank unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 376X/B700XSK |

X = The seal material and inlet type change the Part No.



70mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B700A00



Specification

Nominal size

70mm

Inlet connection

2" BSP with swivel

Outlet connection

70mm

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Main seals: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 3.0 Kg
 Design Pressure (MAWP): 25 Bar
 Test Pressure: 37.5 Bar
 Max. Coupling Pressure: 2 Bar
 Design Temp. Min/Max: -40°C / 200°C (**metal parts**)
 Design Temp. Min/Max: -20°C / 200°C (**Viton seals**)

NOTE: The working temperature of the hose unit seals can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code
 BS EN 12516-2

Range

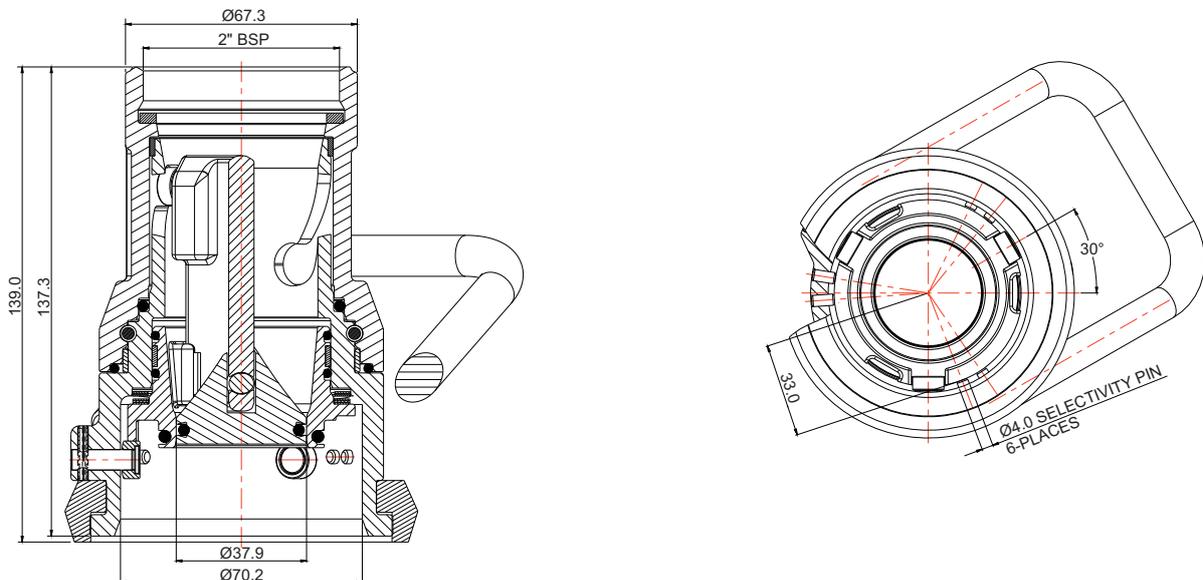
| Description | Part No. |
|--|--------------|
| 2" BSP inlet, Viton seal, no selectivity | 895V/B700A00 |

Related Parts

| Description | Part No. |
|---------------------------------------|--------------|
| 70mm/2" BSP tank unit, Viton seal | 376V/B700A00 |
| Pressure-tight cap for 70mm tank unit | 915/5420X |
| 70mm rubber dust plug | 915/5171 |

Section View

Shows the selectivity pin position

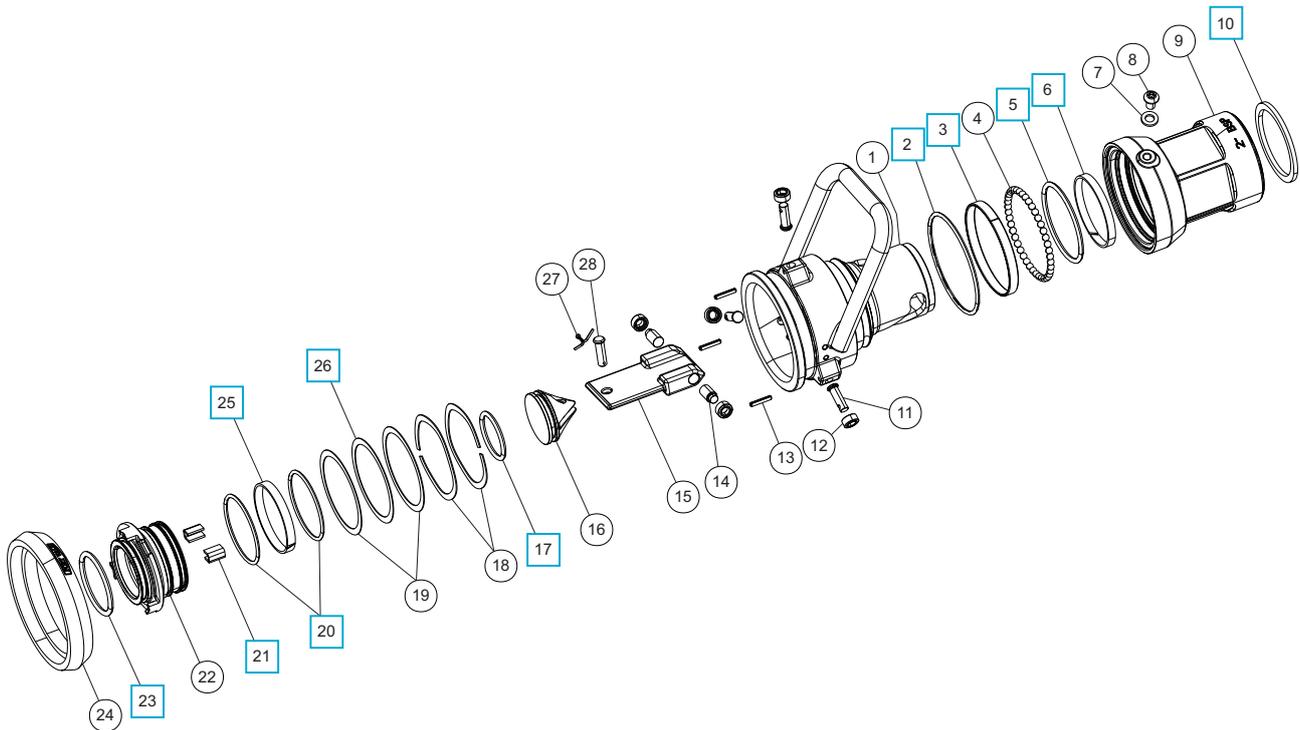




70mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B700A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|----------------------------------|-------------------------------------|
| 1 | 70mm body (no selectivity) *Note | 895/B70200 |
| 2 | Fortyt O ring | ORB149F1 <input type="checkbox"/> |
| 3 | RTFE plain bearing | 895/0708/9 <input type="checkbox"/> |
| 4 | Ball bearing (42) | 10145SS |
| 5 | Viton O ring *Note | ORB832VR <input type="checkbox"/> |
| 6 | RTFE scarf cut bearing | 895/0708/8 <input type="checkbox"/> |
| 7 | M6 spring washer | 5113-008 |
| 8 | M6 button screw | 5111-610 |
| 9 | Swivel body | 895/B701 |
| 10 | PTFE gasket | 10450P <input type="checkbox"/> |
| 11 | Roller spindle pin (3) | 895/0707 |
| 12 | Roller (5) | 895/0706 |
| 13 | Roll pin (3) | 5128-071 |
| 14 | Piston spindle (2) | 895/B705/6 |
| 15 | Piston plate | 895/B705/5 |
| 16 | Poppet head | 895/B705/1 |
| 17 | Viton O ring *Note | 5005-173 <input type="checkbox"/> |
| 18 | Wave spring (2) | 5104-1002 |
| 19 | Thrust washer (2) | 895/0703/6 |
| 20 | Viton O ring (2) *Note | ORB134VR <input type="checkbox"/> |
| 21 | Slide strip (2) | 895/B708/4 <input type="checkbox"/> |
| 22 | Piston guide | 895/B703 |
| 23 | Viton O ring *Note | 5005-172 <input type="checkbox"/> |

Parts List

| Item | Description | Part No. |
|------|----------------------------|-------------------------------------|
| 24 | Rubber buffer ring | 895/0708/2 |
| 25 | RTFE inner housing bearing | 895/0708/6 <input type="checkbox"/> |
| 26 | PTFE thrust bearing | 895/0708/7 <input type="checkbox"/> |
| 27 | Split pin | 5118-012 |
| 28 | Clevis pin | 895/0705/8 |

NOTE: The hose unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 895X/B700XSK |

X = The seal material and inlet type change the Part No.



Dry Disconnect Coupling Selectivity: 70mm

Selectivity Systems

Fort Vale 70mm Drytyt couplings are compatible with Todo®, Mann-Tek® and Avery Hardoll® couplings and are available with these selectivity systems to prevent accidental mixing of cargoes:

| Selectivity | Compatible | Refer to |
|-------------|----------------------------------|----------------------|
| 15 Position | Fort Vale® | Figure 1 and Table 1 |
| 7 Position | Todo®, Mann-Tek®, Avery Hardoll® | Figure 2 and Table 2 |
| 21 Position | Todo®, Mann-Tek®, Avery Hardoll® | Figure 2 and Table 3 |

Figure 1: 70mm Tank Unit and 70mm Hose Unit - 15 Position Selectivity

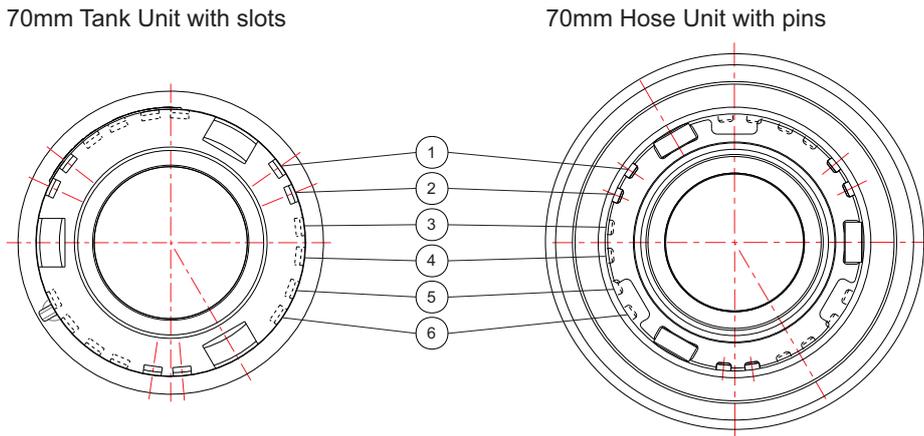


Table 1: 15 Position Selectivity

| Selectivity Letter | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pin & Slot Position | 1+2 | 1+3 | 1+4 | 1+5 | 1+6 | 2+3 | 2+4 | 2+5 | 2+6 | 3+4 | 3+5 | 3+6 | 4+5 | 4+6 | 5+6 |

Figure 2: 70mm Tank Unit and 70mm Hose Unit - 7 and 21 Position Selectivity

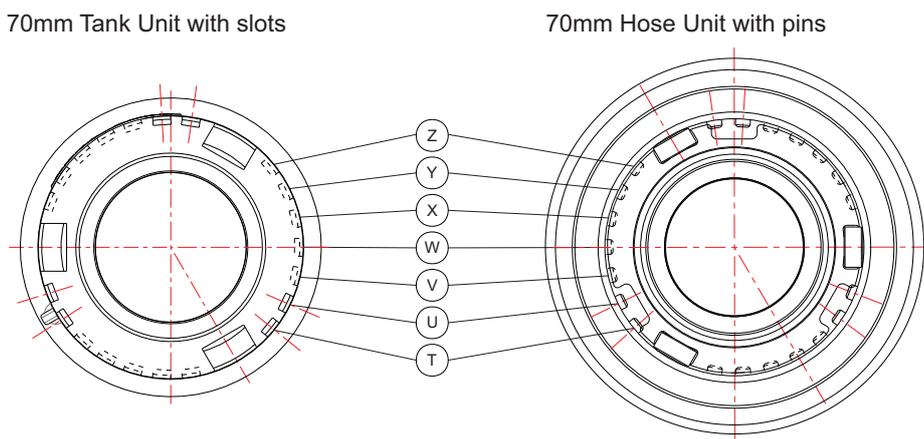


Table 2: 7 Position Selectivity

| Pin/Slot Position | | | | | | |
|-------------------|---|---|---|---|---|---|
| T | U | V | W | X | Y | Z |

Table 3: 21 Position Selectivity

| Pin/Slot Position | | | | | | |
|-------------------|----|----|----|----|----|----|
| TU | TV | TW | TX | TY | TZ | UV |
| UW | UX | UY | UZ | VW | VX | VY |
| VZ | WX | WY | WZ | XY | XZ | YZ |

CAUTION: A hose unit with one pin (from 7 position selectivity) can engage with a tank unit with two slots (from 21 position selectivity). Check the compatibility of the tank and hose units carefully before you connect them.



Dry Disconnect Coupling Selectivity: 70mm

How to Order

To order a 70mm Drytyt tank unit or hose unit with selectivity, select the slot/pin position and add the letter or number code to the end of the tank/hose unit part number. Please refer to the example below:

e.g. tank unit - 7 or 15 position selectivity: 376X/B700XQ
tank unit - 21 position selectivity: 376X/B700XTU

e.g. hose unit - 7 or 15 position selectivity: 895X/B700XQ
hose unit - 21 position selectivity: 895X/B700XTU

NOTE: The seal material and inlet connection change the "X" values in the part numbers above.



105mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B050A00



Specification

Nominal size

105mm

Inlet connection

3" BSP

Outlet/process connection

105mm

Properties

Fire-safe design. Non-protruding poppet

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Poppet O ring: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

| | |
|-------------------------|---------------------------------------|
| Weight: | 3.3 Kg |
| Design Pressure (MAWP): | 25 Bar |
| Test Pressure: | 37.5 Bar |
| Max. Coupling Pressure: | specified by the hose unit |
| Design Temp. Min/Max: | -40°C / 200°C (metal parts) |
| Design Temp. Min/Max: | -20°C / 200°C (Viton O ring) |

NOTE: The working temperature of the poppet O ring can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 14432

Range

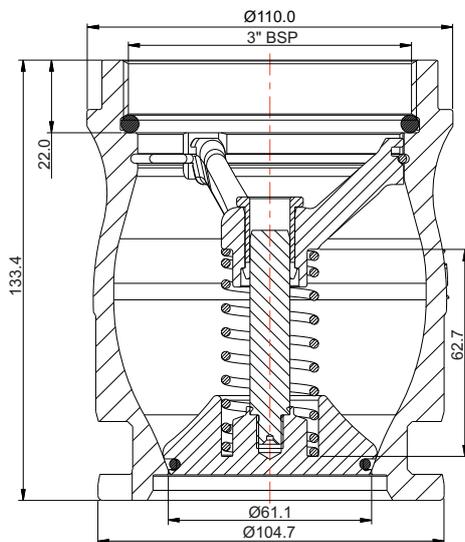
| Description | Part No. |
|--|--------------|
| 3" BSP inlet, Viton seal, no selectivity | 376V/B050A00 |
| Flanged inlet, no selectivity *Note | 376V/B050X00 |

NOTE: Different flange specifications are available. Please contact Fort Vale.

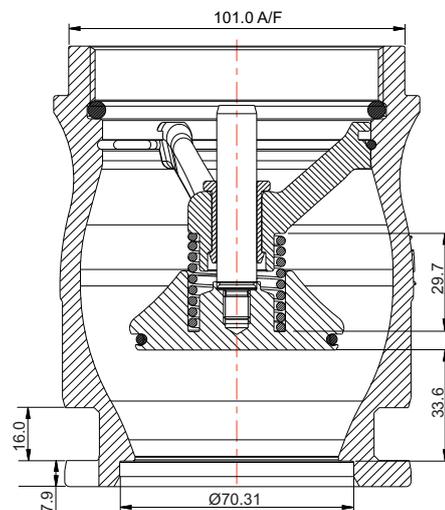
Related Parts

| Description | Part No. |
|------------------------------------|--------------|
| 105mm pressure-tight cap | 915/5480X |
| 105mm/3" BSP hose unit, Viton seal | 895V/B105A00 |

Section View



CLOSED POSITION



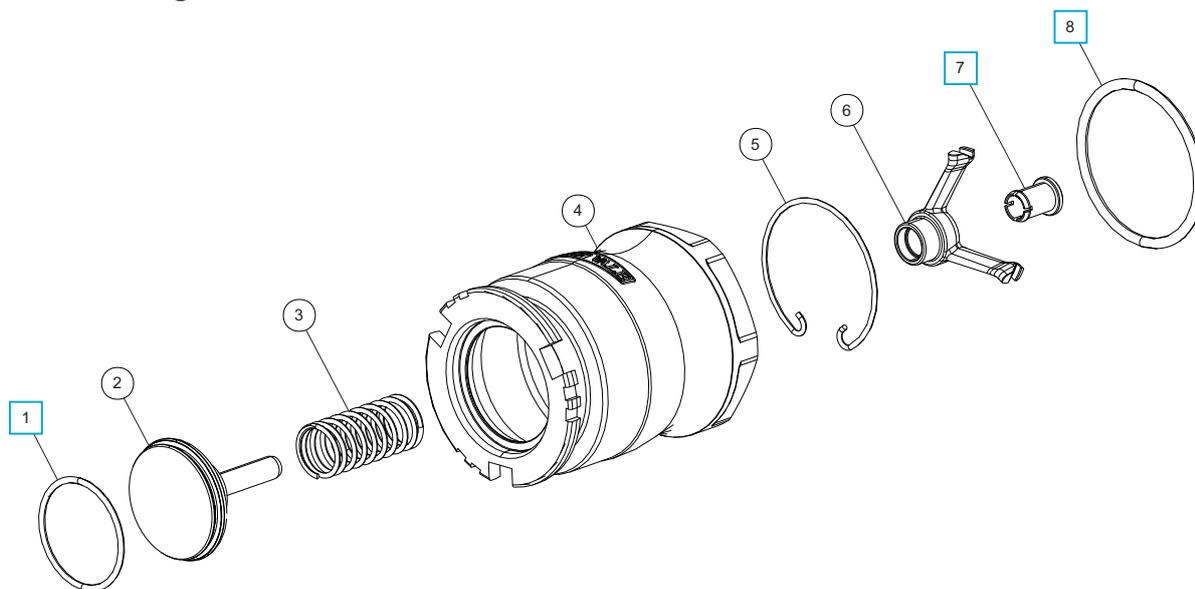
OPEN POSITION



105mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B050A00

Parts Drawing



Parts List

| Item | Description | Part No. | |
|------|--|-------------|---|
| 1 | Viton poppet O ring *Note | 5005-156 | ☐ |
| 2 | Poppet assembly | 376/B153 | |
| 3 | Poppet spring | 5104-799 | |
| 4 | 105mm body (no selectivity) *Note | 376/B051A00 | |
| 5 | Snap ring | 5120-082 | |
| 6 | Spider | 376/B192 | |
| 7 | Guide bush | 376/1052/2 | ☐ |
| 8 | PTFE O ring | 5005-103 | ☐ |

NOTE: The tank unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|--------------------------------------|--------------|
| All parts marked ☐ in the Parts List | 376X/B050XSK |

X = The seal material and inlet type change the Part No.



105mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B105X00



Specification

Nominal size
105mm

Inlet connection options
2½" BSP with swivel
3" BSP with swivel

Outlet connection
105mm

Selectivity
None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials
Contact parts: 316 stainless steel
Main seals: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 8.9 Kg
Design Pressure (MAWP): 25 Bar
Test Pressure: 37.5 Bar
Max. Coupling Pressure: 2 Bar
Design Temp. Min/Max: -40°C / 200°C (metal parts)
Design Temp. Min/Max: -20°C / 200°C (Viton seals)

NOTE: The working temperature of the hose unit seals can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code
BS EN 12516-2

Range

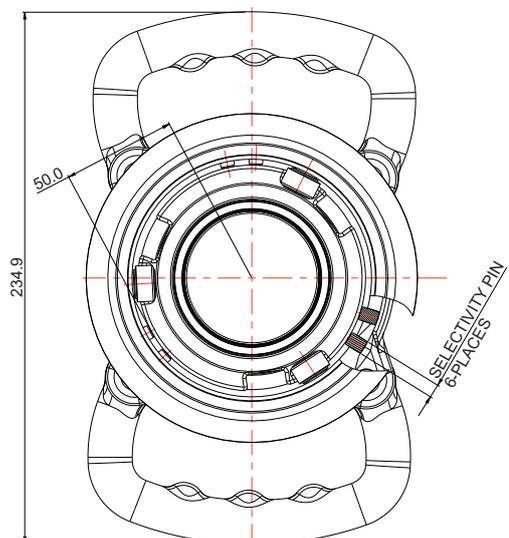
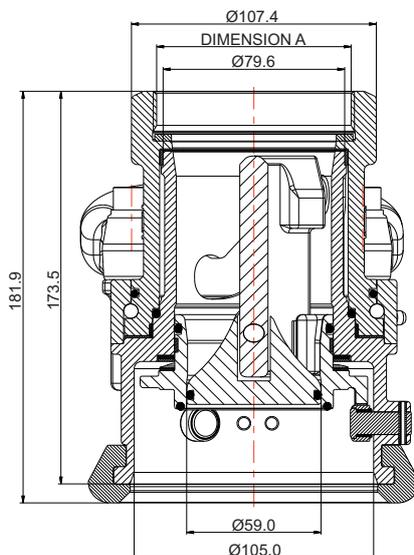
| Description | Part No. |
|---|--------------|
| 2½" BSP inlet, Viton seal, no selectivity | 895V/B105B00 |
| 3" BSP inlet, Viton seal, no selectivity | 895V/B105A00 |

Related Parts

| Description | Part No. |
|--|--------------|
| 105mm/3" BSP tank unit, Viton seal | 376V/B050A00 |
| Pressure-tight cap for 105mm tank unit | 915/5480X |

Section View

Shows the selectivity pin position



DIMENSION A: 2½" BSP inlet: Part No. 895X/B105BXX

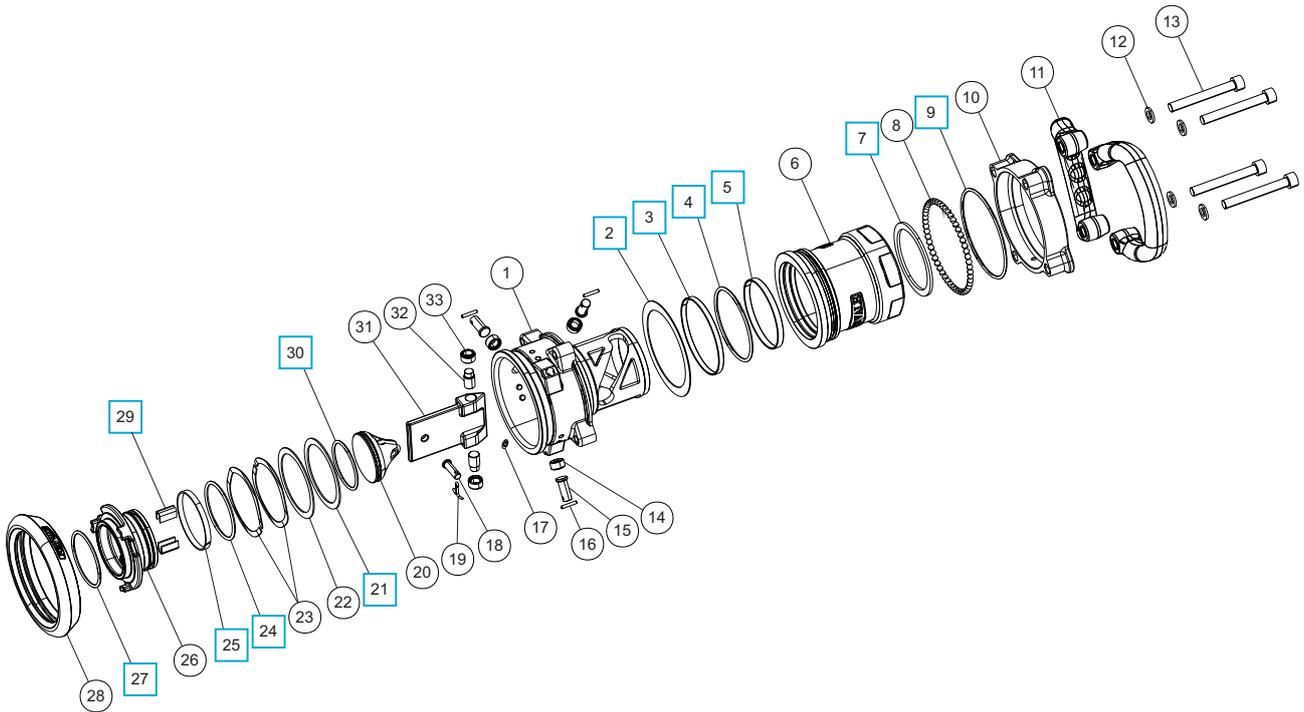
DIMENSION A: 3" BSP inlet: Part No. 895X/B105AXX



105mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B105X00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|---|---|
| 1 | 105mm body (no selectivity) * Note | 895/B19200 |
| 2 | RTFE thrust bearing | 895/1058/8 <input type="checkbox"/> |
| 3 | RTFE plain bearing | 895/1058/7 <input type="checkbox"/> |
| 4 | Viton O ring * Note | 5005-941 <input type="checkbox"/> |
| 5 | RTFE plain bearing | 895/1058/6 <input type="checkbox"/> |
| 6 | Swivel body - 3" BSP Swivel body - 2½" BSP | 895/B151 895/B151B |
| 7 | PTFE gasket - 3" PTFE gasket - 2½" | 10452P 10328P <input type="checkbox"/> |
| 8 | Ball bearing (52) | 10143SS |
| 9 | Viton O ring | 5005-658V <input type="checkbox"/> |
| 10 | Bearing outer body | 895/1054 |
| 11 | Plastic coated handle (2) | 895/1199L |
| 12 | Spring washer (4) | 5113-029 |
| 13 | Cap head bolt (4) | 5111-183 |
| 14 | Roller (3) | 895/1196/1 |
| 15 | Roller spindle pin (3) | 895/1197/2 |
| 16 | Roll pin (3) | 5128-002 |
| 17 | Grease nipple | 5128-026 |
| 18 | Clevis pin | 895/1195/8 |
| 19 | Split pin | 5118-017 |
| 20 | Poppet head | 895/B155/1 |
| 21 | RTFE face bearing | 895/B105 <input type="checkbox"/> |
| 22 | Face bearing plate | 895/B105/1 |

Parts List

| Item | Description | Part No. |
|------|----------------------------|-------------------------------------|
| 23 | Wavey washer (2) | 5111-186 |
| 24 | Viton O ring * Note | 5005-996 <input type="checkbox"/> |
| 25 | Scarf cut bearing | 895/1058/4 <input type="checkbox"/> |
| 26 | Piston guide | 895/B153 |
| 27 | Viton O ring * Note | 5005-313 <input type="checkbox"/> |
| 28 | Rubber buffer ring | 895/1058/2 |
| 29 | Slide strip (2) | 895/B158/5 <input type="checkbox"/> |
| 30 | Viton O ring * Note | ORB832VR <input type="checkbox"/> |
| 31 | Piston plate | 895/B155/4 |
| 32 | Roller spindle (2) | 895/B155/6 |
| 33 | Piston roller (2) | 895/1196 |

NOTE: The hose unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 895X/B105XSK |

X = The seal material and inlet type change the Part No.



Dry Disconnect Coupling Selectivity: 105mm & 119mm

Selectivity Systems

Fort Vale 105mm and 119mm Drytyt couplings are compatible with Todo®, Mann-Tek® and Avery Hardoll® couplings and are available with these selectivity systems to prevent accidental mixing of cargoes:

| Selectivity | Compatible | Refer to |
|-------------|----------------------------------|----------------------|
| 15 Position | Fort Vale® | Figure 1 and Table 1 |
| 7 Position | Todo®, Mann-Tek®, Avery Hardoll® | Figure 2 and Table 2 |
| 21 Position | Todo®, Mann-Tek®, Avery Hardoll® | Figure 2 and Table 3 |

Figure 1: 105mm/119mm Tank Unit and 105mm/119mm Hose Unit - 15 Position Selectivity

105mm/119mm Tank Unit with slots

105mm/119mm Hose Unit with pins

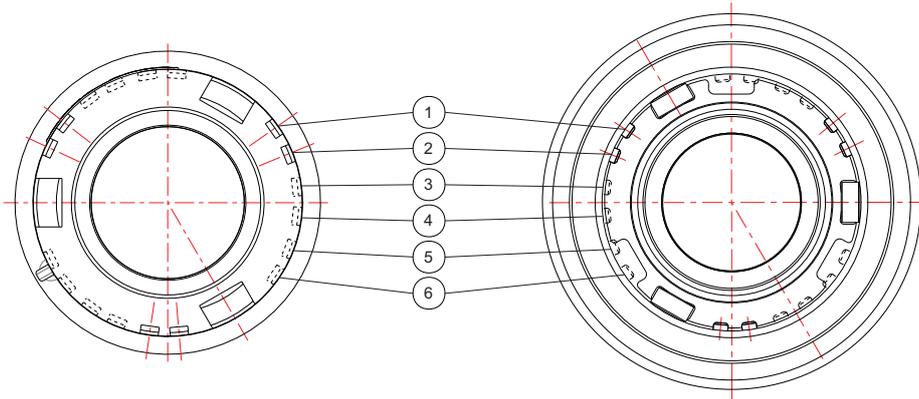


Table 1: 15 Position Selectivity

| Selectivity Letter | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pin & Slot Position | 1+2 | 1+3 | 1+4 | 1+5 | 1+6 | 2+3 | 2+4 | 2+5 | 2+6 | 3+4 | 3+5 | 3+6 | 4+5 | 4+6 | 5+6 |

Figure 2: 105mm/119mm Tank Unit and 105mm/119mm Hose Unit - 7 and 21 Position Selectivity

105mm/119mm Tank Unit with slots

105mm/119mm Hose Unit with pins

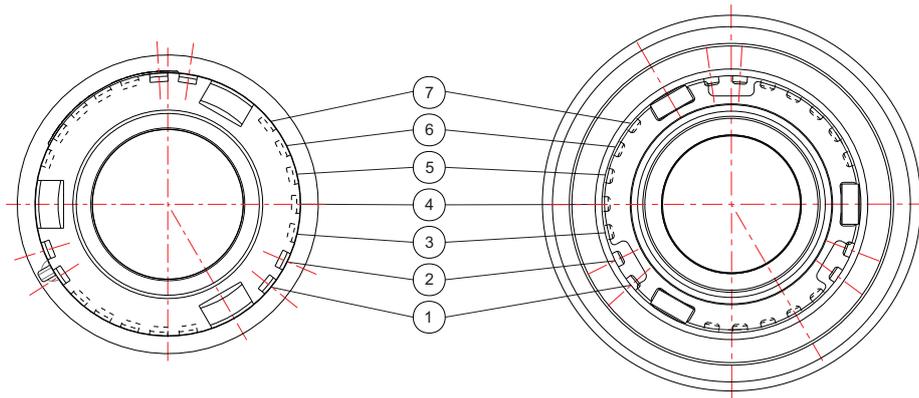


Table 2: 7 Position Selectivity

| Pin/Slot Position | | | | | | |
|-------------------|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Table 3: 21 Position Selectivity

| Pin/Slot Position | | | | | | |
|-------------------|----|----|----|----|----|----|
| 12 | 13 | 14 | 15 | 16 | 17 | 23 |
| 24 | 25 | 26 | 27 | 34 | 35 | 36 |
| 37 | 45 | 46 | 47 | 56 | 57 | 67 |

CAUTION: A hose unit with one pin (from 7 position selectivity) can engage with a tank unit with two slots (from 21 position selectivity). Check the compatibility of the tank and hose units carefully before you connect them.



Dry Disconnect Coupling Selectivity: 105mm & 119mm

How to Order

To order a 105mm or a 119mm Drytyt tank unit or hose unit with selectivity, select the slot/pin position and add the letter or number code to the end of the tank/hose unit part number. Please refer to the example below:

e.g. 105mm tank unit - 7 or 15 position selectivity: 376X/B050XQ
119mm tank unit - 21 position selectivity: 376X/B190XTU

e.g. 105mm hose unit - 7 or 15 position selectivity: 895X/B105XQ
119mm hose unit - 21 position selectivity: 895X/B190XTU

NOTE: The seal material and inlet connection change the "X" values in the part numbers above.



119mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B190A00



Specification

Nominal size

119mm

Inlet connection

3" BSP

Outlet/process connection

119mm

Properties

Fire-safe design. Non-protruding poppet

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Poppet O ring: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 3.7 Kg
 Design Pressure (MAWP): 25 Bar
 Test Pressure: 37.5 Bar
 Max. Coupling Pressure: specified by the hose unit
 Design Temp. Min/Max: -40°C / 200°C (**metal parts**)
 Design Temp. Min/Max: -20°C / 200°C (**Viton O ring**)

NOTE: The working temperature of the poppet O ring can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 14432

STANAG 3756 (Edition 4) NATO Standardization Agency

Range

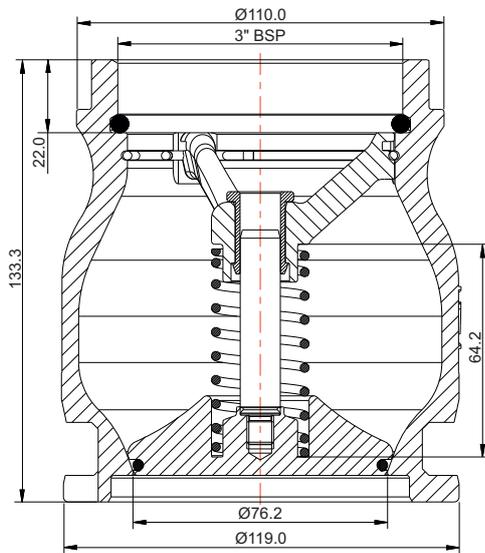
| Description | Part No. |
|--|--------------|
| 3" BSP inlet, Viton seal, no selectivity | 376V/B190A00 |
| Flanged inlet, no selectivity *Note | 376V/B190X00 |

NOTE: Different flange specifications are available. Please contact Fort Vale.

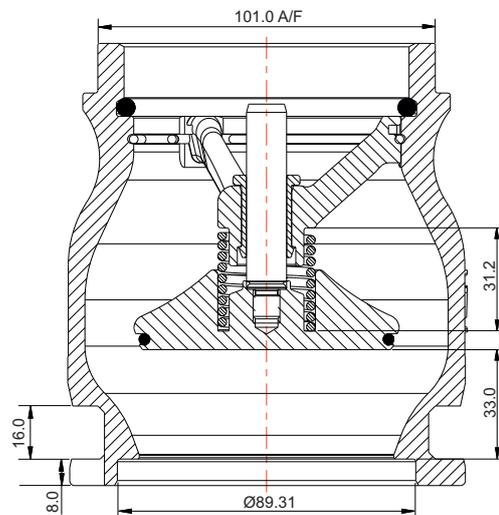
Related Parts

| Description | Part No. |
|------------------------------------|--------------|
| 119mm pressure-tight cap | 915/5470X |
| 119mm/3" BSP hose unit, Viton seal | 895V/B190A00 |
| 119mm rubber dust cap | 915/5175 |

Section View



CLOSED POSITION



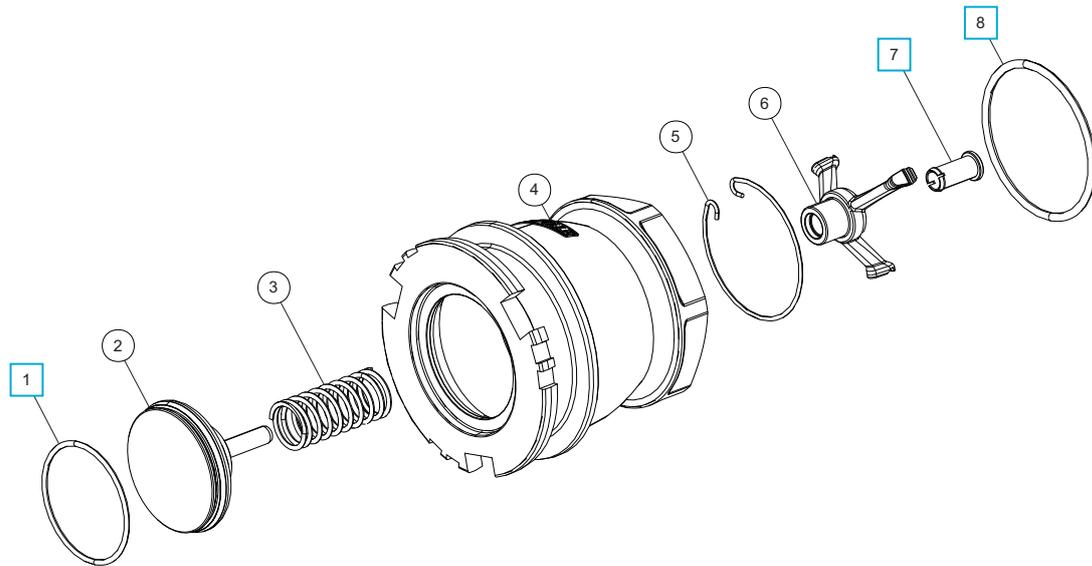
OPEN POSITION



119mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B190A00

Parts Drawing



Parts List

| Item | Description | Part No. | |
|------|--|-------------|---|
| 1 | Viton poppet O ring *Note | 5005-730 | ☐ |
| 2 | Poppet assembly | 376/B193 | |
| 3 | Poppet spring | 5104-799 | |
| 4 | 119mm body (no selectivity) *Note | 376/B191A00 | |
| 5 | Snap ring | 5120-082 | |
| 6 | Spider | 376/B192 | |
| 7 | Guide bush | 376/1052/2 | ☐ |
| 8 | PTFE O ring | 5005-103 | ☐ |

NOTE: The tank unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|--------------------------------------|--------------|
| All parts marked ☐ in the Parts List | 376X/B190XSK |

X = The seal material and inlet type change the Part No.



119mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B190A00



Specification

Nominal size

119mm

Inlet connection

3" BSP with swivel

Outlet connection

119mm

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Main seals: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Design Condition 1: 20 Barg

Design Pressure (MAWP): 20 Bar

Test Pressure: 33.8 Bar

Design Temp. Min/Max: -40°C / 200°C (metal parts)

Design Condition 2: 25 Barg

Design Pressure (MAWP): 25 Bar

Test Pressure: 35 Bar

Design Temp. Min/Max: -40°C / 100°C (metal parts)

Weight: 9.9 Kg

Max. Coupling Pressure: 2 Bar

Design Temp. Min/Max: -20°C / 200°C (Viton seals)

NOTE: The working temperature of the hose unit seals can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 12516-2

STANAG 3756 (Edition 4) - 119mm size only

Range

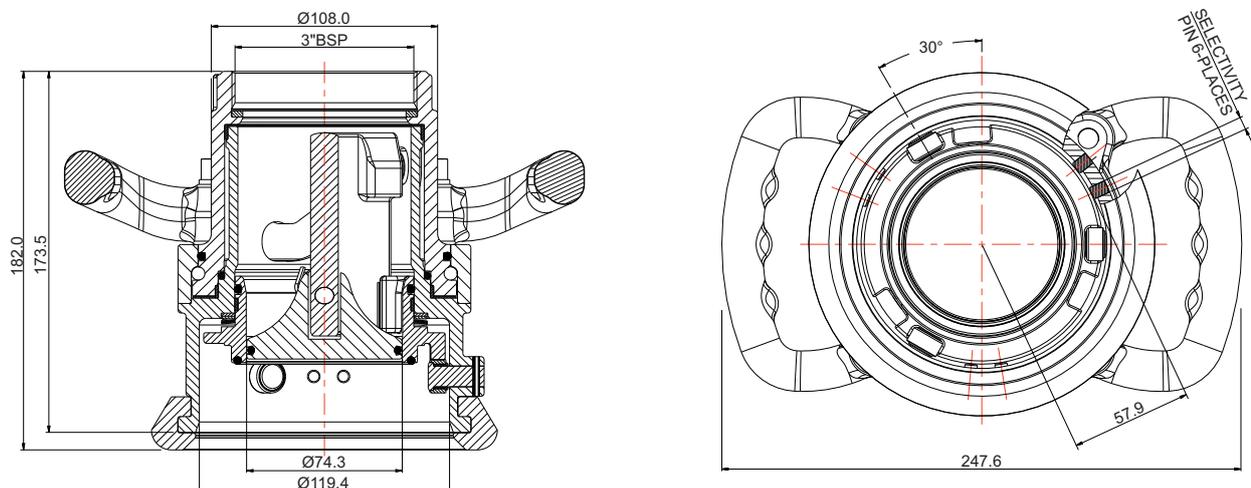
| Description | Part No. |
|--|--------------|
| 3" BSP inlet, Viton seal, no selectivity | 895V/B190A00 |

Related Parts

| Description | Part No. |
|--|--------------|
| 119mm/3" BSP tank unit, Viton seal | 376V/B190A00 |
| Pressure-tight cap for 119mm tank unit | 915/5470X |
| 119mm rubber dust plug | 915/5173 |

Section View

Shows the selectivity pin position

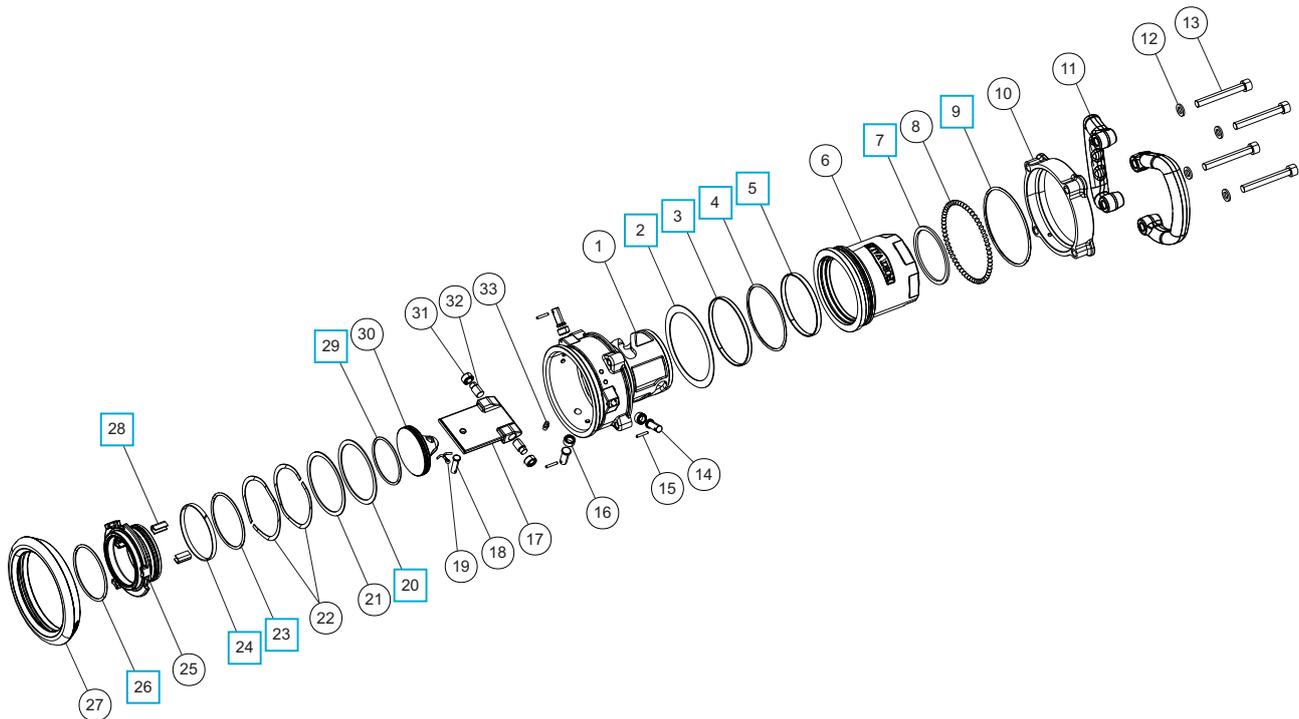




119mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B190A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|-----------------------------------|-------------------------------------|
| 1 | 119mm body (no selectivity) *Note | 895/B19200 |
| 2 | RTFE thrust bearing | 895/1198/8 <input type="checkbox"/> |
| 3 | RTFE plain bearing | 895/1198/7 <input type="checkbox"/> |
| 4 | Viton O ring *Note | 5005-315 <input type="checkbox"/> |
| 5 | RTFE plain bearing | 895/1198/6 <input type="checkbox"/> |
| 6 | Swivel body | 895/B191 |
| 7 | PTFE gasket | 10454P <input type="checkbox"/> |
| 8 | Ball bearing (58) | 10143SS |
| 9 | Viton O ring | 5005-934 <input type="checkbox"/> |
| 10 | Bearing outer body | 895/1194 |
| 11 | Plastic coated handle (2) | 895/1199L |
| 12 | Spring washer (4) | 5113-029 |
| 13 | Cap head bolt (4) | 5111-183 |
| 14 | Roller spindle pin (3) | 895/1197/2 |
| 15 | Roll pin (3) | 5128-002 |
| 16 | Roller (3) | 895/1196/1 |
| 17 | Piston plate | 895/B195/4 |
| 18 | Clevis pin | 895/B195/8 |
| 19 | Split pin | 5118-050 |
| 20 | RTFE spring face bearing | 895/1649/1 <input type="checkbox"/> |
| 21 | Thrust bearing | 895/B198/1 |
| 22 | Wavy washer (2) | 5111-184 |
| 23 | Viton O ring *Note | 5005-551V <input type="checkbox"/> |

Parts List

| Item | Description | Part No. |
|------|------------------------|-------------------------------------|
| 24 | RTFE scarf cut bearing | 895/1198/4 <input type="checkbox"/> |
| 25 | Piston guide | 895/B193 |
| 26 | Viton O ring *Note | 5005-936 <input type="checkbox"/> |
| 27 | Rubber buffer ring | 895/1198/2 |
| 28 | Slide strip (2) | 895/B198/5 <input type="checkbox"/> |
| 29 | Viton O ring *Note | 5005-314 <input type="checkbox"/> |
| 30 | Piston head | 895/B195/1 |
| 31 | Piston roller (2) | 895/1196 |
| 32 | Roller spindle (2) | 895/B155/6 |
| 33 | Grease nipple | 5128-026 |

NOTE: The hose unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 895X/B190XSK |

X = The seal material and inlet type change the Part No.



164mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B640A00



Specification

Nominal size

164mm

Inlet connection

4" BSP

Outlet/process connection

164mm

Properties

Fire-safe design. Non-protruding poppet

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Poppet O ring: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

| | |
|-------------------------|---------------------------------------|
| Weight: | 7.4 Kg |
| Design Pressure (MAWP): | 10 Bar |
| Test Pressure: | 17 Bar |
| Max. Coupling Pressure: | specified by the hose unit |
| Design Temp. Min/Max: | -40°C / 200°C (metal parts) |
| Design Temp. Min/Max: | -20°C / 200°C (Viton O ring) |

NOTE: The working temperature of the poppet O ring can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 14432

Range

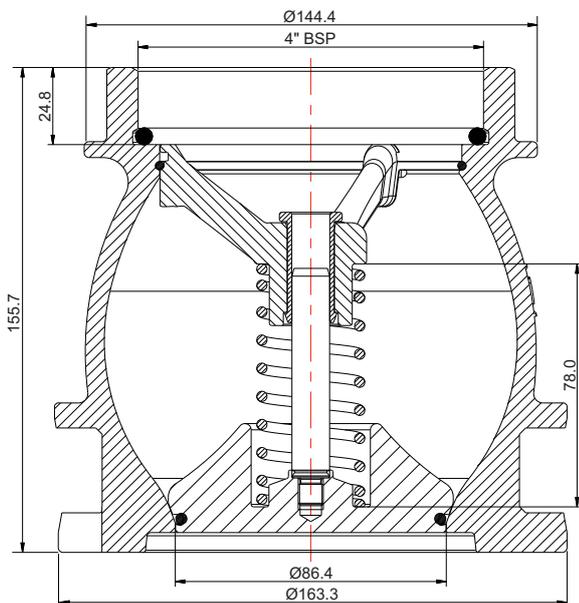
| Description | Part No. |
|--|--------------|
| 4" BSP inlet, Viton seal, no selectivity | 376V/B640A00 |
| Flanged inlet, no selectivity *Note | 376V/B640X00 |

NOTE: Different flange specifications are available. Please contact Fort Vale.

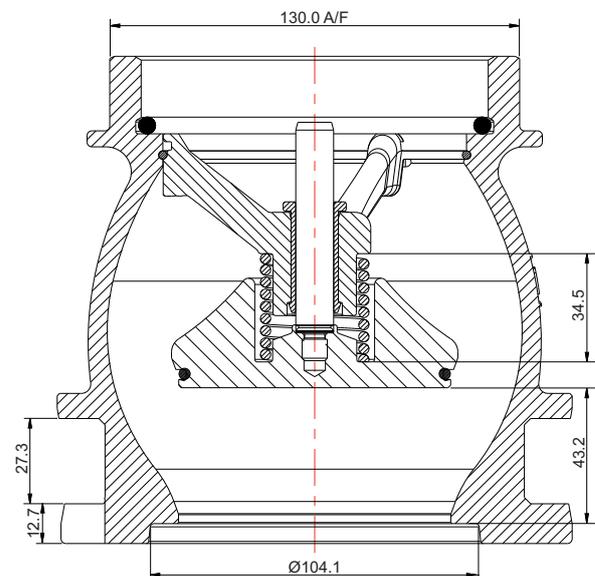
Related Parts

| Description | Part No. |
|------------------------------------|--------------|
| 164mm pressure-tight cap | 915/5490X |
| 164mm/4" BSP hose unit, Viton seal | 895V/B164A00 |
| 164mm rubber dust cap | 915/5176 |

Section View



CLOSED POSITION



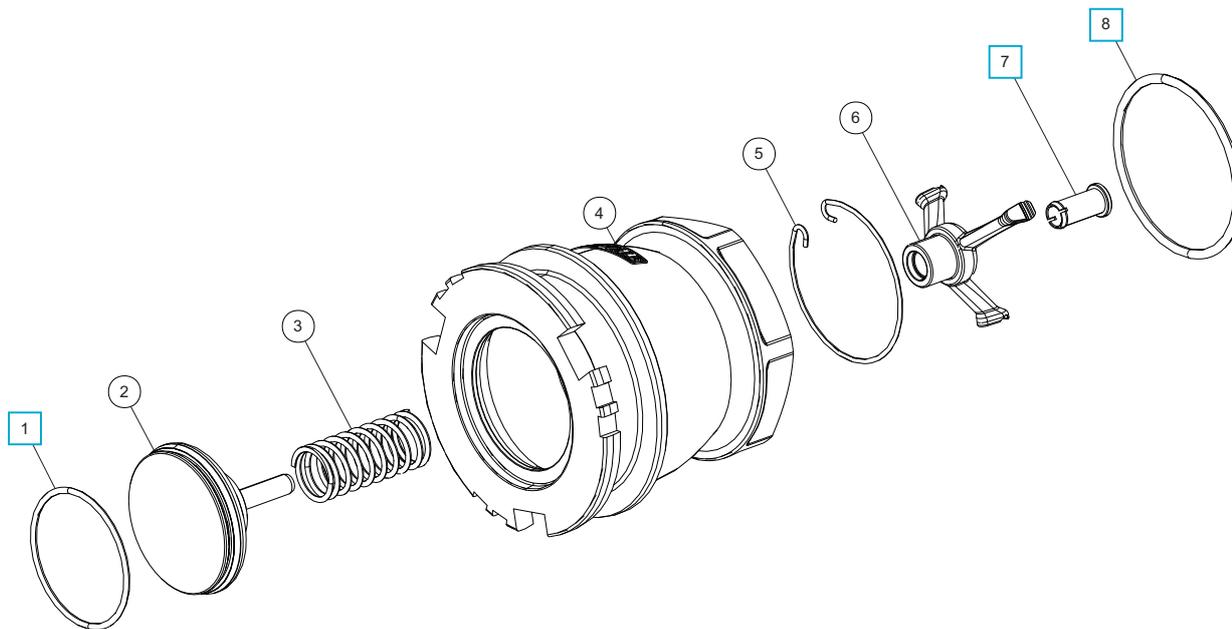
OPEN POSITION



164mm Drytyt Dry Disconnect Tank Unit

Part No: 376V/B640A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|--|-------------------------------------|
| 1 | Viton poppet O ring *Note | 5005-551V <input type="checkbox"/> |
| 2 | Poppet assembly | 376/B643 |
| 3 | Poppet spring | 5104-807 |
| 4 | 164mm body (no selectivity) *Note | 376/B641A00 |
| 5 | Snap ring | 5120-072 |
| 6 | Spider | 376/B642 |
| 7 | Guide bush | 376/1642/2 <input type="checkbox"/> |
| 8 | PTFE O ring | ORB345P0 <input type="checkbox"/> |

NOTE: The tank unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 376X/B640XSK |

X = The seal material and inlet type change the Part No.



164mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B164A00



Specification

Nominal size

164mm

Inlet connection

4" BSP with swivel

Outlet connection

164mm

Selectivity

None as standard. All industry accepted selective positions are available, refer to the Selectivity data sheet

Materials

Contact parts: 316 stainless steel

Main seals: Viton

Alternatives are available, refer to the Design Options page

Design Conditions

Design Condition 1: 10 Barg

Design Pressure (MAWP): 10 Bar

Test Pressure: 15 Bar

Design Temp. Min/Max: -40°C / 200°C (metal parts)

Design Condition 2: 18.9 Barg

Design Pressure (MAWP): 18.9 Bar

Test Pressure: 28.4 Bar

Design Temp. Min/Max: -40°C / 175°C (metal parts)

Weight: 16.7 Kg

Max. Coupling Pressure: 4 Bar

Design Temp. Min/Max: -20°C / 200°C (Viton seals)

NOTE: The working temperature of the hose unit seals can change the design temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

BS EN 12516-2

Range

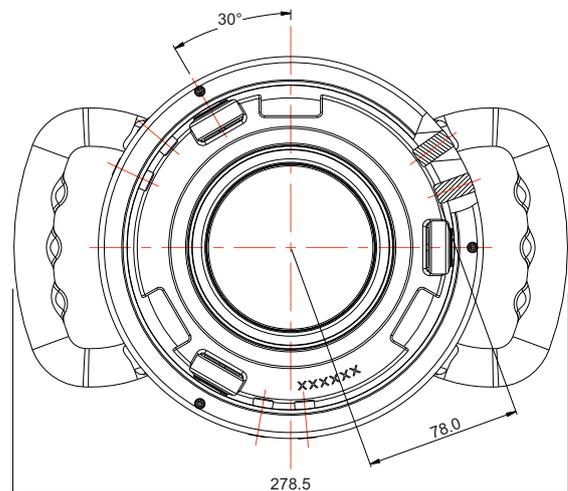
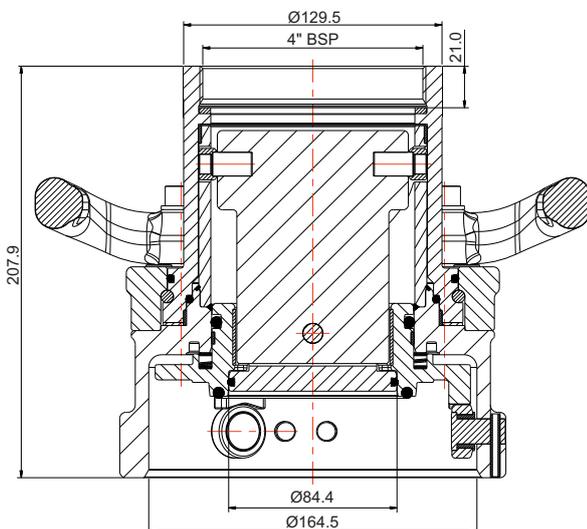
| Description | Part No. |
|--|--------------|
| 4" BSP inlet, Viton seal, no selectivity | 895V/B164A00 |

Related Parts

| Description | Part No. |
|--|--------------|
| 164mm/4" BSP tank unit, Viton seal | 376V/B640A00 |
| Pressure-tight cap for 164mm tank unit | 915/5490X |
| 164mm rubber dust plug | 915/5174 |

Section View

Shows the selectivity pin position

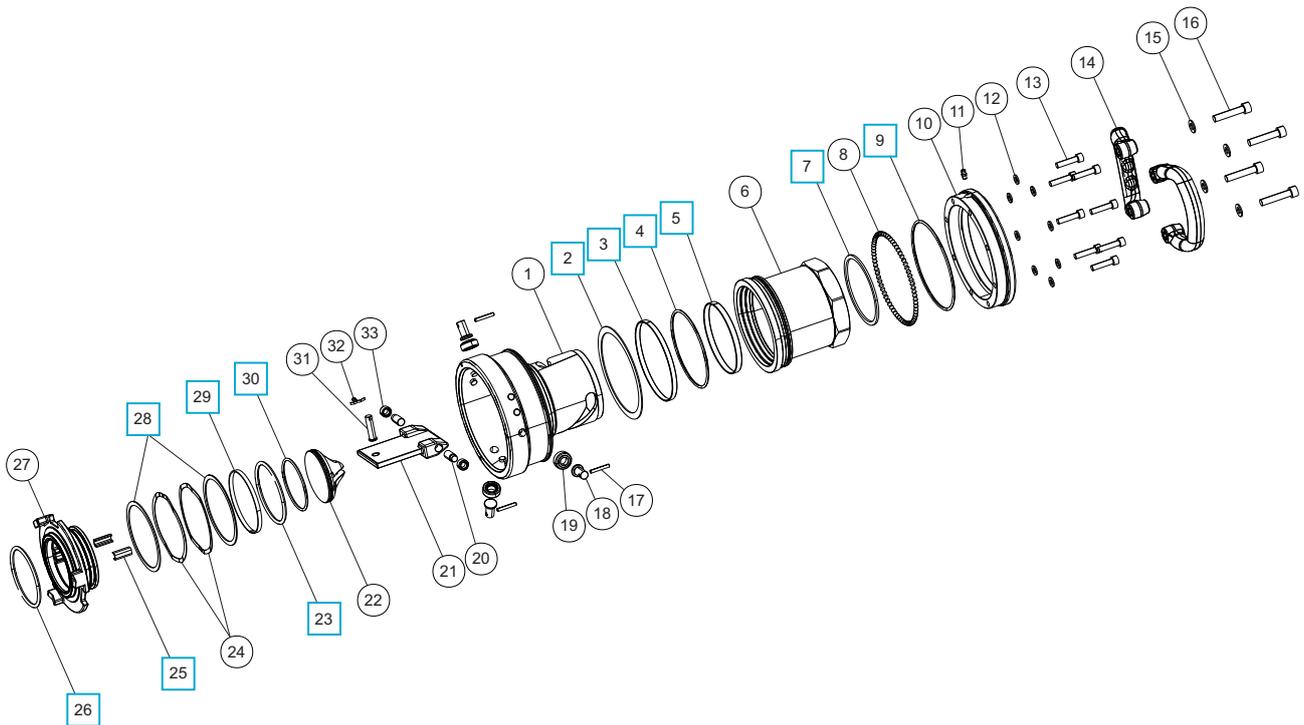




164mm Drytyt Dry Disconnect Hose Unit

Part No: 895V/B164A00

Parts Drawing



Parts List

| Item | Description | Part No. |
|------|-----------------------------------|-------------------------------------|
| 1 | 164mm body (no selectivity) *Note | 895/B64200 |
| 2 | RTFE thrust bearing | 895/1648/8 <input type="checkbox"/> |
| 3 | RTFE plain bearing | 895/1648/7 <input type="checkbox"/> |
| 4 | Viton O ring *Note | 5005-958 <input type="checkbox"/> |
| 5 | RTFE plain bearing | 895/1648/6 <input type="checkbox"/> |
| 6 | Swivel body | 895/B641 |
| 7 | PTFE gasket | 10456P <input type="checkbox"/> |
| 8 | Ball bearing (70) | 10143SS |
| 9 | Viton O ring | 5005-943 <input type="checkbox"/> |
| 10 | Bearing gland | 895/B644 |
| 11 | Grease nipple | 5128-026 |
| 12 | M8 spring washer (8) | 5113-003 |
| 13 | M8 cap screw (8) | 5111-0054 |
| 14 | Plastic coated handle (2) | 895/1199L |
| 15 | M10 plain washer (4) | 5113-009 |
| 16 | M10 cap head bolt (4) | 5111-601 |
| 17 | Roll pin (3) | 5128-001 |
| 18 | Roller spindle pin (3) | 895/1647 |
| 19 | Roller bush (3) | 895/1646/1 |
| 20 | Roller spindle (2) | 895/B645/6 |
| 21 | Piston plate | 895/B645/4 |
| 22 | Poppet head | 895/B645/1 |
| 23 | Viton O ring *Note | 5005-426V <input type="checkbox"/> |

Parts List

| Item | Description | Part No. |
|------|-------------------------|-------------------------------------|
| 24 | Wavey washer (2) | 5111-192 |
| 25 | Slide strip (2) | 895/B648/5 <input type="checkbox"/> |
| 26 | Viton O ring *Note | 5005-942 <input type="checkbox"/> |
| 27 | Piston guide | 895/B643 |
| 28 | Spring face bearing (2) | 895/1649 <input type="checkbox"/> |
| 29 | RTFE scarf cut bearing | 895/1648/4 <input type="checkbox"/> |
| 30 | Viton O ring *Note | 5005-683V <input type="checkbox"/> |
| 31 | Clevis pin | 895/1645/8 |
| 32 | Split pin | 5118-050 |
| 33 | Roller (2) | 895/1196 |

NOTE: The hose unit specification changes the Part No.

Seal Kit

| Description | Part No. |
|---|--------------|
| All parts marked <input type="checkbox"/> in the Parts List | 895X/B164XSK |

X = The seal material and inlet type change the Part No.



Dry Disconnect Coupling Selectivity: 164mm

Selectivity Systems

Fort Vale 164mm Drytyt couplings are compatible with Todo®, Mann-Tek® and Avery Hardoll® couplings and are available with these selectivity systems to prevent accidental mixing of cargoes:

| Selectivity | Compatible | Refer to |
|-------------|--|----------------------|
| 7 Position | Fort Vale®, Todo®, Mann-Tek®, Avery Hardoll® | Figure 1 and Table 1 |
| 21 Position | Fort Vale®, Todo®, Mann-Tek®, Avery Hardoll® | Figure 1 and Table 2 |

Figure 1: 164mm Tank Unit and 164mm Hose Unit - 7 and 21 Position Selectivity

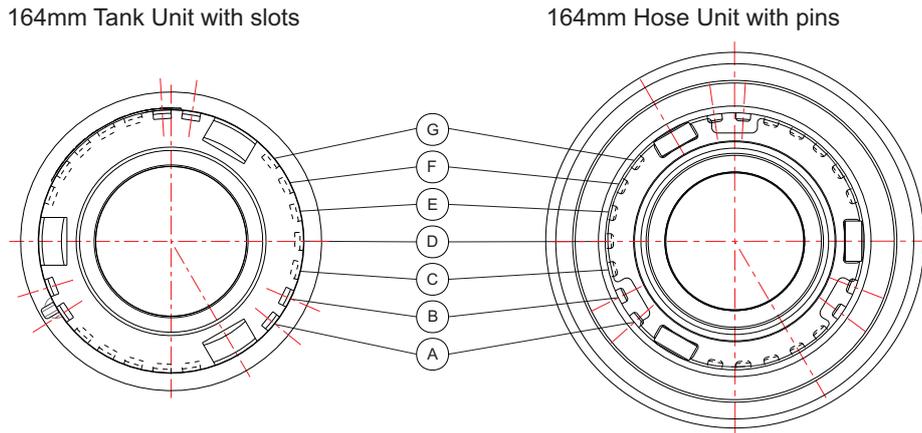


Table 1: 7 Position Selectivity

| Pin/Slot Position | | | | | | |
|-------------------|---|---|---|---|---|---|
| A | B | C | D | E | F | G |

Table 2: 21 Position Selectivity

| Pin/Slot Position | | | | | | |
|-------------------|----|----|----|----|----|----|
| AB | AC | AD | AE | AF | AG | BC |
| BD | BE | BF | BG | CD | CE | CF |
| CG | DE | DF | DG | EF | EG | FG |

CAUTION: A hose unit with one pin (from 7 position selectivity) can engage with a tank unit with two slots (from 21 position selectivity). Check the compatibility of the tank and hose units carefully before you connect them.

How to Order

To order a 164mm Drytyt tank unit or hose unit with selectivity, select the slot/pin position and add the letter or number code to the end of the tank/hose unit part number. Please refer to the example below:

e.g. tank unit - 7 position selectivity: 376X/B640X**G**
 tank unit - 21 position selectivity: 376X/B640X**AB**

e.g. hose unit - 7 position selectivity: 895X/B164X**G**
 hose unit - 21 position selectivity: 895X/B164X**AB**

NOTE: The seal material and inlet connection change the “X” values in the part numbers above.



Dust Caps & Plugs for Drytyt Dry Disconnect Couplings Accessories & Spare Parts



Specification

Caps for tank units have a ring and tab to attach it to the tank unit.

Plugs for hose units have a 3mm hole to attach a keyring and chain or wire.

Nominal sizes

70mm, 119mm, 164mm

Material

Black EPDM rubber

If the type you need is not shown, please contact us.

Dust Caps - For Tank Units

| Size | Part No. |
|-------|----------|
| 70mm | 915/5172 |
| 119mm | 915/5175 |
| 164mm | 915/5176 |

Dust Plugs - For Hose Units

| Size | Part No. |
|-------|----------|
| 70mm | 915/5171 |
| 119mm | 915/5173 |
| 164mm | 915/5174 |



Pressure-Tight Caps for Drytyt Tank Units

Accessories & Spare Parts



Example shown: 119mm cap, Part No. 915/5470X

The pressure-tight cap protects the tank unit outlet face from damage and can be used as a secondary or a tertiary closure. The top cap/seal plate assembly lets you safely release pressure that can be inside the tank unit.

All pressure-tight caps are fire-safe designed and seal metal-to-metal when installed onto the tank unit. The seal plate O ring makes a gas-tight and liquid-tight seal. (Refer to Seal Options NOTE).

Please read the Installation Instructions on the next page.

Design Conditions

56mm, 70mm, 105mm, 119mm only

Design Pressure (MAWP): 25.0 Bar
Test Pressure: 37.5 Bar

164mm only

Design Pressure (MAWP): 10.0 Bar
Test Pressure: 16.0 Bar

Design Temp. Min/Max: -40°C / 200°C (**metal parts**)

NOTE: The design temperature conditions are for metal parts only. The working temperature of the seal plate O ring can change the design temperature limits. Refer to Seal Options.

Design Codes

BS EN 14432

Specification

Nominal sizes

56mm, 70mm, 105mm, 119mm, 164mm

Compatibility

Fort Vale Drytyt, Todo®, Mann-Tek®, Avery Hardoll®

Properties

Chain point and TIR/padlock hole

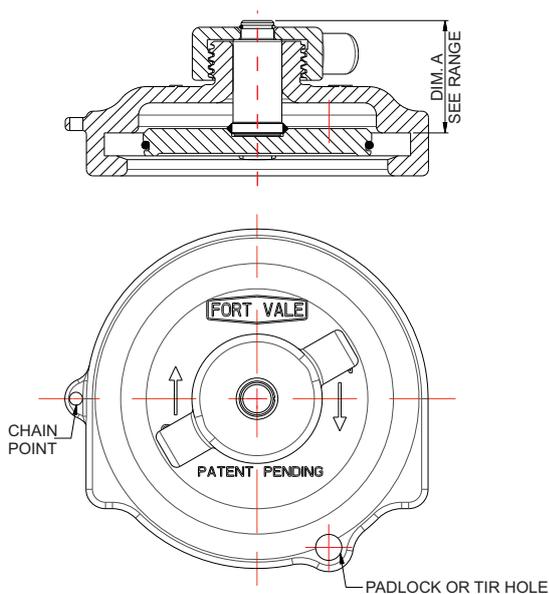
Materials

Contact parts: 316 stainless steel

Seal plate O ring: refer to Seal Options

Section View

119mm cap (915/5470X) shown in the closed position



Range

| Size | Weight | Dim.A | Part No. |
|-------|---------|---------|-----------|
| 56mm | 0.91 Kg | 45.1mm | 915/5410X |
| 70mm | 1.07 Kg | 42.1mm | 915/5420X |
| 105mm | 1.92 Kg | 44.1mm | 915/5480X |
| 119mm | 2.33 Kg | 44.1mm | 915/5470X |
| 164mm | 3.68 Kg | 44.1 mm | 915/5490X |

The Part No. suffix X refers to the seal material code - refer to Seal Options

Seal Options

| Seal Code | Seal Material | Seal Temp.Range |
|-----------|--------------------|-----------------|
| 915/54XXB | Butyl | -30°C to +120°C |
| 915/54XXE | EPDM | -20°C to +150°C |
| 915/54XXF | Fortyt *Note | -55°C to +200°C |
| 915/54XXN | Nitrile | -20°C to +100°C |
| 915/54XXP | Perfluoroelastomer | -15°C to +200°C |
| 915/54XXQ | Viton FDA approved | -20°C to +200°C |
| 915/54XXV | Viton | -20°C to +200°C |

NOTE: Fortyt is liquid-tight but is not bubble-tight

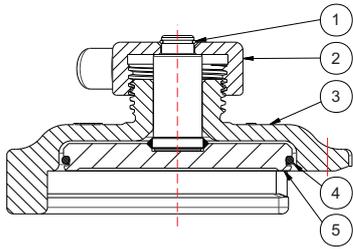


Pressure-Tight Caps for Drytyt Tank Units

Accessories & Spare Parts

Parts Drawing

119mm cap (915/5470X) shown in the open position



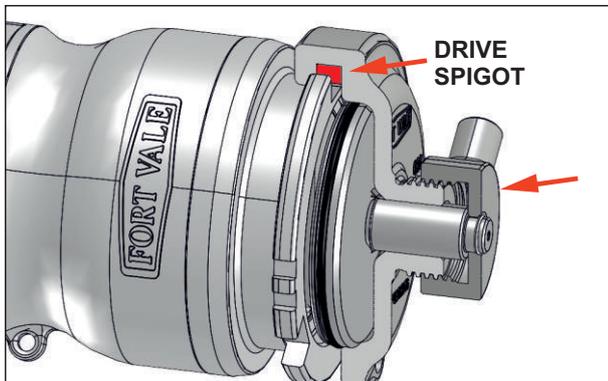
Parts List

| Item | Description | Part No. |
|------|----------------------------|----------|
| 1 | Retaining clip | 5120-056 |
| 2 | Anti-galling top cap *Note | 915/54X4 |
| 3 | Cap body *Note | 915/54XX |
| 4 | O ring *Note | XXXXXXX |
| 5 | Seal plate *Note | 915/54XX |

NOTE: The cap specification changes the Part No.

Installation Instructions

Example shown: 119mm cap and tank unit



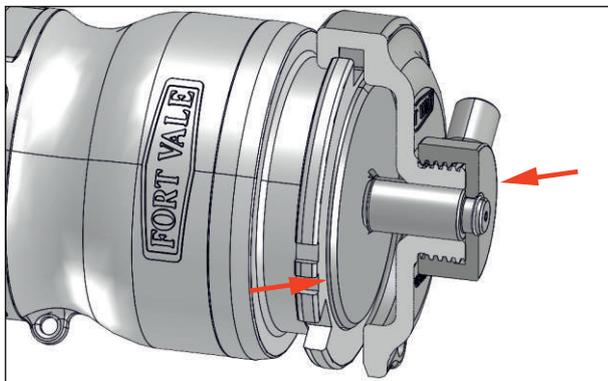
How to install the pressure-tight cap assembly

Move the top cap to the top of its thread.

Note the drive spigot position.

Align the drive spigot with a roller slot on the tank unit and move the cap assembly down to install it onto the tank unit.

Make sure the drive spigot engages with the slot.



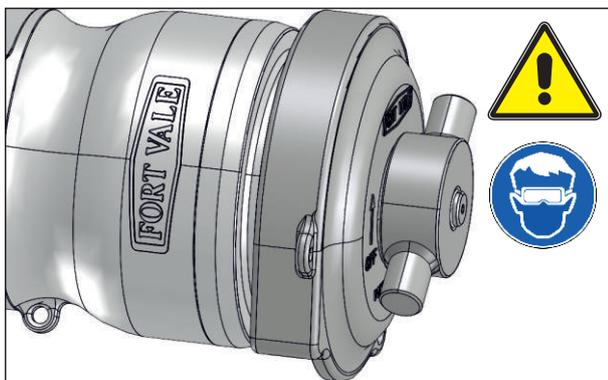
Tighten the top cap.

The seal plate will move into the recess in the tank unit.

When the top cap is fully tight, the assembly is locked and sealed.

NOTE: A Fortyt O ring will give a liquid-tight seal, but will not give a bubble-tight seal.

Attach a chain as necessary.



How to remove the pressure-tight cap assembly

CAUTION: There can be pressure inside the tank unit. Keep your face away from the cap and wear PPE.

Loosen the top cap and unscrew it until it is at the top of its thread.

The seal plate will retract into the cap body. If there is pressure inside the tank unit, it will be safely released.

When the pressure is released, move the cap assembly up to remove it from the tank unit.



APPENDIX

Catalogue

| | |
|---|--|
| A | Bolt Torque Guide & Step Loading Procedure |
| B | Client Responsibilities - Valves & Accessories |



Bolt Torque Guide & Step Loading Procedure

Installation & Operating Instructions

Flange Bolting

CAUTION: Weld-distortion and too much tightening force will cause damage to a flange.

It is important not to cause damage to weld-in flanges and mating flanges. If a flange is damaged it will not give a satisfactory seal when a gasket and secondary mating flange is installed.

Bolt-stress can decrease after initial tightening. The cause can be deformation of the gasket material, particularly with soft materials such as a CNAF/PTFE envelope gasket.

Best procedure recommends that, after initial bolting, the flange joint is tightened again after a period of time. Most gasket manufacturers advise a period of 24 hours. ASME PCC-1-2000 GUIDELINES FOR PRESSURE BOUNDARY BOLTED FLANGE JOINT ASSEMBLY advises a minimum period of 4 hours.

Bolt torque calculations are based on a flat flange to within 0.15mm.

Recommended bolt torque values will be reduced if a lubrication is used.

Bolt Torque

Bolt Torque Values

Fort Vale bolt torque values are given as a reference guide only and are based on:

- the use of a CNAF/PTFE gasket.
- unlubricated fasteners.
- a flange flat to within 0.15mm.

CAUTION: If you use a different gasket material, a lubricant or a flange with distortion, you must re-calculate the torque value.

Bolt Torque Procedure

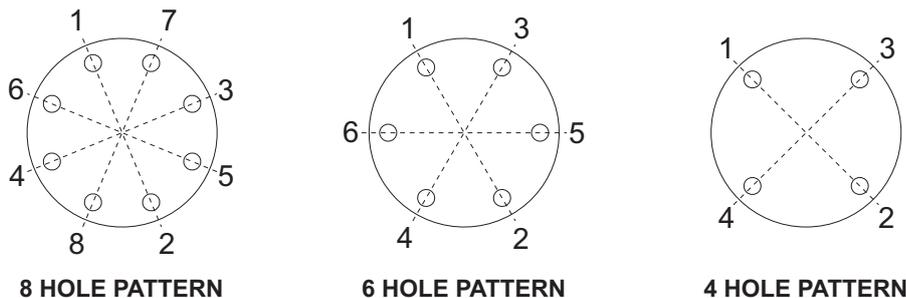
To install flanged parts correctly:

- Examine the mating flange of the part.
- If the flange is marked with a torque value, obey that torque value.
- If there is no torque value marked on the mating flange, obey the bolt torque values given in Table BT1.
- Tighten the bolts evenly in sequence. Refer to Figure BT1.
- Obey the Step Loading Procedure (ASME PCC-1-2000). Refer to the next page.

Table BT1

| Thread | Torque Value |
|--------|-------------------|
| M10 | 30 Nm (22 lbf.ft) |
| M12 | 65 Nm (48 lbf.ft) |
| M16 | 81 Nm (60 lbf.ft) |

Figure BT1





Bolt Torque Guide & Step Loading Procedure

Installation & Operating Instructions

Step Loading Procedure

To install flanged parts correctly, obey the Step Loading Procedure extract from ASME PCC-1-2000:

Install

Hand tighten, then “snug up” to 15 Nm (10 lbf.ft) to 30 Nm (20 lbf.ft) (not to exceed 20% of Target Torque). Check flange gap around circumference for uniformity. If the gap around the circumference is not reasonably uniform, make the appropriate adjustments by selective tightening before proceeding.

Round 1

Tighten to 20% to 30% of Target Torque. Check flange gap around circumference for uniformity. If the gap around the circumference is not reasonably uniform, make the appropriate adjustments by selective tightening before proceeding.

Round 2

Tighten to 50% to 70% of Target Torque. Check flange gap around circumference for uniformity. If the gap around the circumference is not reasonably uniform, make the appropriate adjustments by selective tightening before proceeding.

Round 3

Tighten to 100% of Target Torque. Check flange gap around circumference for uniformity. If the gap around the circumference is not reasonably uniform, make the appropriate adjustments by selective tightening before proceeding.

Round 4

Continue tightening the bolts, but on a rotational clockwise pattern until no further nut rotation occurs at the Round 3 Target Torque value. For indicator bolting, tighten bolts until the indicator rod retraction readings for all bolts are within the specified range.

Round 5

Time permitting, wait a minimum of 4 hr and repeat Round 4; this will restore the short-term creep relaxation/embedment losses. If the flange is subjected to a subsequent test pressure higher than its rating, it may be desirable to repeat this round after the test is completed.



Client Responsibilities - Valves & Accessories

Installation, Operation & Maintenance Instructions

Compatibility

Make sure that the function and technical specification of the valve/accessory is compatible with the vessel service conditions and the cargo. This includes, but is not limited to:

- dimensions.
- pressure/vacuum setting.
- air/vapour/liquid flow capacity.
- maximum allowable working pressure.
- test pressure.
- minimum/maximum design temperatures.
- materials of construction.

Maintenance and Inspection

Fort Vale valves and accessories have a long life if you use them correctly in compatible service conditions. It is not necessary to lubricate the parts, but we recommend that you do the inspections that follow:

Inspections at regular intervals:

1. Examine the valve to make sure there is no damage, wear or corrosion.
2. Examine the valve and adjacent area to make sure there is no leakage of cargo.
3. Examine the fasteners to make sure they are not loose.
4. Make sure the valve operates correctly.

CAUTION: If you operate the valve with very corrosive cargo, or near its temperature and/or pressure limit (very high or very low temperature and/or pressure), do the inspections more frequently.

Also, schedule regular maintenance based on how frequently the valve is used, the type of cargo and the service conditions.

Inspections after 2½ years of service or a minor incident:

1. Examine the valve to make sure there is no damage, wear or corrosion.
2. Make sure the valve operates correctly.
3. Do a pressure test on the valve.

Inspections after 5 years of service or a major incident:

1. Disassemble and clean the valve.
2. Replace all the valve seals and do a pressure test.

Replacement Parts

Do not adapt or change the valve. If you install a replacement part, it must be a genuine Fort Vale part.

WARNING: If you install a part that is not genuine, there is a risk of:

- injury to personnel.
- permanent damage to the valve.
- permanent damage to the vessel.
- valve malfunction.

External Fire

If you install the valve in an area where there is a risk of external fire, you must install compatible accessories to prevent damage to the valve.

Compatibility of Accessories

Accessory components must cause no interference with the valve's function. Accessories must be made from compatible materials that will cause no damage to the valve materials. Do not install an accessory that will cause an increased load on the valve, such as mechanical, static, dynamic or thermal load.

Mis-use

Obey the instructions and recommended procedures in the installation and operating instructions. Obey the pressure and temperature markings on the valve and on the drawing. Use the valve/accessory for its correct function only. Fort Vale accept no liability or responsibility for incorrect use of the valve/accessory.



Our subsidiaries are located in:

US Office

126 N. Virginia
La Porte
TX 77571
USA

Tel: +1 281 471 8100

Fax: +1 281 471 8116

Email: ussales@fortvale.com

Head Office

Calder Vale Park
Simonstone Lane
Simonstone, Burnley
Lancashire, BB12 7ND, UK

Tel: +44 (0) 1282 687120

Fax: +44 (0) 1282 687110

Email: sales@fortvale.com

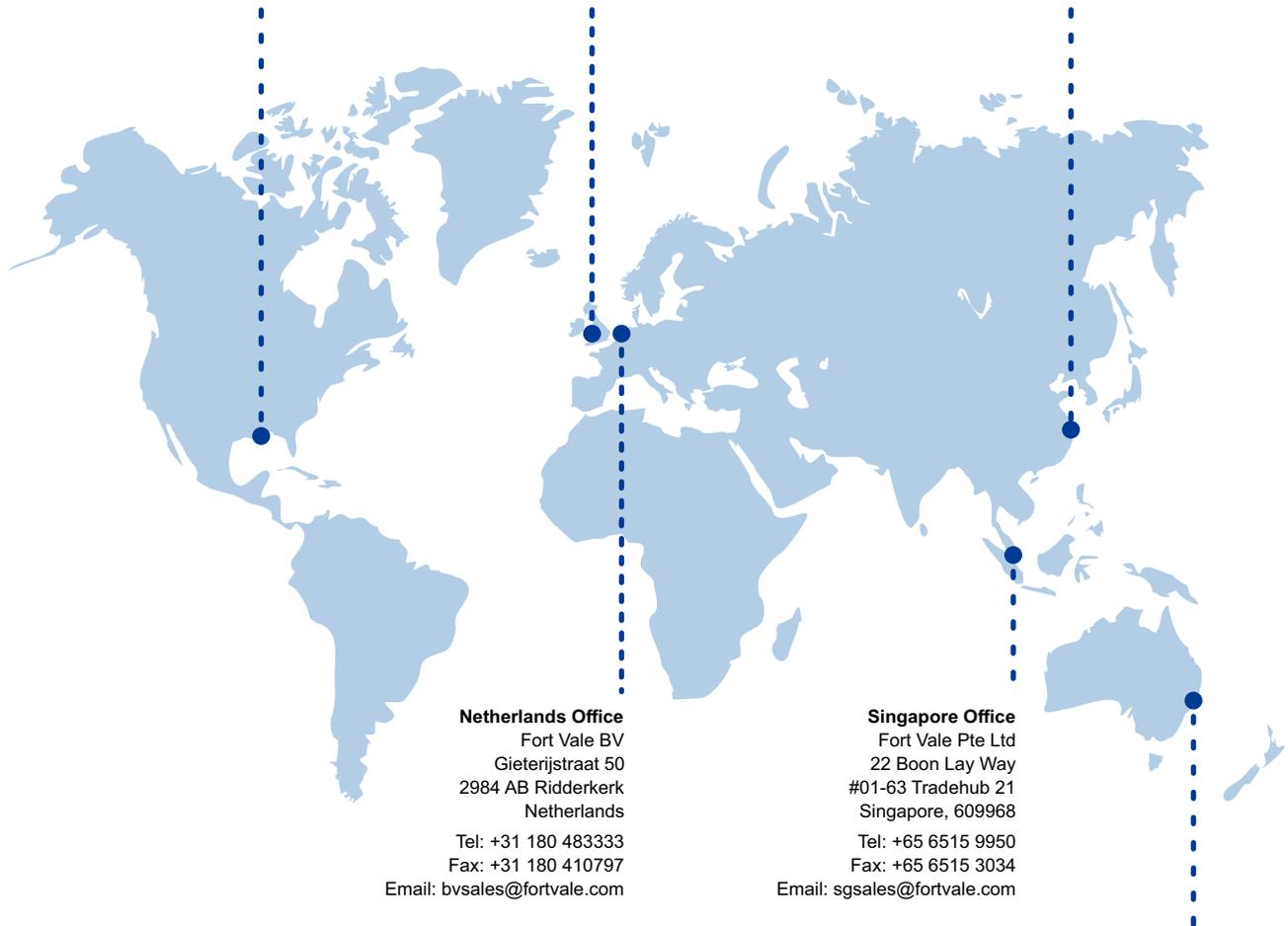
China Office

Fort Vale Engineering Shanghai Ltd
Building 11 88 Yuanshan Road
Xinzhuang Industry Park
Shanghai 201108 China

Tel: +86 21 6442 1367

Fax: +86 21 6442 1376

Email: cnsales@fortvale.com



Netherlands Office

Fort Vale BV
Gieterijstraat 50
2984 AB Ridderkerk
Netherlands

Tel: +31 180 483333

Fax: +31 180 410797

Email: bvsales@fortvale.com

Singapore Office

Fort Vale Pte Ltd
22 Boon Lay Way
#01-63 Tradehub 21
Singapore, 609968

Tel: +65 6515 9950

Fax: +65 6515 3034

Email: sgsales@fortvale.com

Australia Office

Fort Vale Australia Pty Ltd
Bellwood Business Park
Unit 14, 49 Bellwood Street
Darra, Queensland, 4076

Tel: +61 7 3189 5059

Email: ausales@fortvale.com

We also have Authorised Distributors around the world to provide you with product sales and after-market services. To find your nearest distributor, please visit our website - www.fortvale.com

