FLAT FACE
QUICK COUPLINGS

Stucchi®

A CONSTANT FLOW OF SOLUTIONS

FLAT FACE QUICK COUPLINGS: **INDEX**

The flat face quick couplings main features are reduction of contamination into the circuit, fluid lose in the environment and reduction of air inclusion during connection and disconnection.
Thanks to these key features, flat face couplings are become synonymous with safe, reliable and ecological products. Stucchi offers a wide range of flat face couplings series to satisfy a diverse range of application requirements.

GENERAL INSTRUCTIONS FOR SELECTION AND USE OF THE PRODUCTS

The incorrect use of products can cause malfunctioning and safety risks.
Therefore, before using Stucchi products, we strongly recommend reading and following the "general instructions for selection and use of the products" and the "instructions of use" of the specified product intending to use.

ATTENTION!!!
A defect, a wrong choice or an improper use of products, can cause damage to persons, animals and objects.
It is MOST IMPORTANT to read and closely follow the instructions written below before selecting or using Stucchi products.

1.0 GENERAL INSTRUCTIONS

1.1 Context
These safety instructions form a supplement and shall be used as one document together with the technical documentation related to the specified product to be installed.
1.2 Safeguarding
It is recommended that all systems and equipment be protected so that safety of people, animals and objects will be guaranteed in case of defect of the product.
1.3 Distribution of the instruction
A copy of these instructions has to be supplied to every person responsible for the selection and/or usage of the products.
1.4 Responsibility of the user
Due to the most various range of operating use and conditions of the products, Stucchi does not guarantee that every product can be used for every application.
These safety instructions don't analyse all technical parameters that have to be considered by selecting the products.
The end user, through their own analyses and tests, is responsible for the following:
- Final selection of the product
- Ascertainment that the requirements of the end user are satisfied and that the predicted use does not present a safety risk.
- Supply of all warnings regarding the safety of the equipment on which Stucchi products will be used.

2.0 INSTRUCTIONS FOR SELECTION OF THE PRODUCT.

2.1 Application fields
Check that the product is suitable for the specific application.
In case of doubt, contact the Stucchi customer service.
2.2 Type of product
Select the type of product most suitable for the working environment.
Flat face couplings: suitable for working environments where it is necessary to reduce to minimum the fluid loss during disconnection and to avoid dirt inclusion during connection.
Screw couplings: they are suitable for high working pressure and frequent impulses; they are connectable with high residual pressure.
Poppet valve couplings: widely used in the agricultural field.
2.3 Materials and treatments
Make sure that the materials and treatments of the product conform to the exposed working environment.
2.4 Dimensions
Choose the product with dimensions and flow suited to the circuit in order to avoid over stress damaging the product.
2.5 Flow inversion
For application with flow inversion during operation, use only products designed for that scope.
Flow inversion during operation generates turbulences inside the product that can cause damage on the components.
2.6 Thread
Choose the product with thread suitable for the application.
For high pressure conditions, over 50 MPa, products with taper thread NPT are recommended.
2.7 Type of medium
Verify that the seals of the product are compatible with the medium used.
Make sure that other not compatible fluids do not come in contact with the seals in case of maintenance.
Do not use the products with inflammable, explosive or dangerous fluids without approval of Stucchi S.p.A.
2.8 Medium temperature
Verify that the working temperature is within the functional limits of the coupling and its seals.
The couplings must not be connected and disconnected with a temperature higher than 80 degrees Celsius.
In case of connection-disconnection with temperature higher than 30 Celsius degrees, the operator must be protected using gloves and/or other devices to prevent any leakage or splashing causing injury to himself, persons, animals and objects.
2.9 Environment temperature
With extreme temperature conditions, the mechanical resistance of the products changes. The use and handling of couplings in case of ice can be difficult due to ice inclusion in the blocking mechanisms.
Use protective gloves in applications with hot and cold operating temperature.
2.10 Pressure
Verify always if the maximum working pressure of the product is the same or higher than the pressure peaks of the application.
Do not make confusion between the burst pressure and the maximum working pressure, so do not use the value of the burst pressure for your selection.

Check that the number of impulse cycles which the product has been tested is compatible with the impulse number of the application.
2.11 Residual pressure
For connection and disconnection with residual pressure use only couplings that are developed for this scope.
The term 'internal residual pressure' means: the static pressure retained in the system, which has not be generated by a working pump or other accessories in movement.
The structure of the machine or plant in which these products are placed, must be suitable to limit accidental splashing and fluid losses caused by wrong usage or malfunctioning of the product, in order to avoid direct and indirect damage on persons, animals or objects. The temperature of the fluid must not exceed the limits mentioned in point 2.8
2.12 Connection frequency
It is important to know the connection frequency with which the coupling is used, while this has significant influence on the life of both springs and seals.
An under-estimated value can cause unexpected fluid loss.
2.13 Safety device
If used in environments or machines in strict closeness at persons, animals or objects (1 meter), within easy accidental disconnection conditions, it is highly recommended to use ball locked couplings with security system or screw couplings and to make sure that the preventive disconnection mechanism is correctly screwed together.
2.14 Mechanical loads
Side loads, mechanical stresses in general and vibrations reduce significantly the life of the product and are often the cause of sudden damages.
It is recommended to assemble quick release couplings without risks of mechanical damage and over-loading caused by stress generated in flexible or rigid hoses and to assemble quick release couplings on hoses with proper dimensions referred to the nominal passage of the quick release coupling.
2.15 Rotation
In case of applications with rotation use only products developed for this scope.
In case of rotation between male and female part it is necessary to inform in advance Stucchi customer service or to provide the connection with swivel joints suitable for this scope.
2.16 Special applications
You should be advised to take particular attention to special applications (such as vacuum use, high temperature, etc...).
Please consult Stucchi customer service who is able to give instructions concerning the use of Stucchi products.

⚠ Do not use Stucchi products in nuclear , aircraft or military field ; do not use Stucchi products in explosive environment or with inflammable , explosive or dangerous fluid. In this cases contact Stucchi Customer Service for assistance.

3.0 INSTRUCTIONS FOR STOCK PRESERVATION

For a correct preservation of the product and in order to avoid damage before even starting to use the product read carefully the following instructions.
3.1 Packaging
The products have to be kept in closed packaging to protect the components, mainly the seals, from dust and ultraviolet radius.
3.2 Environments
The products shall be kept in environments with low percentage of humidity, no condensation, no salt, protected from atmospheric factors, far away from heating devices and magnetic fields.
Eliminate equipment that can produce ozone, as this element is extremely destructive for the seals.
3.3 Protection cap
The protection cap assembled on the thread has to be removed at the moment of the product installation only.
3.4 Special packaging
In case of requests for special packaging contact the customer service.

4.0 INSTALLATION INSTRUCTIONS

4.1 Pre Installation inspections
Before installation of the product it is necessary to inspect it visually and to verify if the part number and description of the product refers to the one requested.
4.2 Use of flexible hoses
To absorb better the vibrations and mechanical stress on the connection mechanism of the couplings, it is suggested to use flexible hoses.
In this way you avoid vibrations of the circuit that cause accidental disconnection or damage on the coupling.
4.3 Hose assembling
The hose has to be assembled so that connection/disconnection of the couplings takes place in easy way and aligned position.
Presence of high radial/axial forces creates misalignment of the couplings during connection/disconnection and can cause damage on the connection and sealing parts.
4.4 Adapter assembling
Use adapters and sealing systems conform to the thread of the product only.
To install and remove the couplings use proper tools and act only on flat spanner surfaces of the coupling. Do not use improper tools (spanner for hoses, bench vice, pincer etc.) while these can cause damage on the coupling with malfunction as result.
Use the tightening torque stabilized by the norm to screw the adapters.
4.5 Positioning of the coupling
It is suggested to install the couplings in such way that they can easy be connected and disconnected, reducing to the minimum the forces and risks for the operator.
It is suggested to protect the couplings using shelters and protections (see sector norms) to guarantee the security and to prevent damage.

5.0 INSTRUCTIONS OF USE

5.1 Modality of use
The modality of use changes in accordance to the type of product used.
For every type of product, the modality of use described in the catalogue or the specific usage instructions supplied by Stucchi have to be carefully followed .The system has to be immediately stopped and the product should be replaced whenever one of the following conditions will occur:
- Visible damage, damaged parts of the product, cracks and corrosion.
- Difficulties in connection and disconnection generated by too high force compared to the data mentioned in the catalogue.
- Presence of leakage.
- Malfunctioning of the valve.
- Block of the circuit.

In the above mentioned cases please contact Stucchi customer service for information.
5.2 Connection / Disconnection
Before connecting, the parts of the couplings involved in the connection have to be cleaned. Connection with dirty parts may cause damage such as unexpected and dangerous leakage on the coupling.
Another consequence of dirt is contamination of the system.
Do connect and disconnect the coupling only as indicated in the modality of use: do not use other unsuitable tools.
5.3 Mechanical damage
The product shall not be exposed to mechanical damages while they can cause damage and malfunctioning.
Do not use tools to open the valves to release residual pressure trapped in the circuit.
5.4 Circuits cleaning
Use the products in clean circuits.
Dirt can damage components of the product and cause malfunctioning.
5.5 Protection caps
Use anti-dust caps when coupling is disconnected to avoid dirt and contamination and to protect the surface from accidental damage caused by collisions.
5.6 Use of semi-couplings of other manufacturers.
Do not connect Stucchi half-couplings with other not compatible half-couplings.
In case of connection of a Stucchi half-coupling with a half-coupling from another manufacturer, do not exceed the lowest nominal pressure of the two products.

6.0 MAINTENANCE INSTRUCTIONS

The good functional of product is often compromised by a lack of maintenance.
To avoid unexpected damage that can cause times of arrest and safe risks it is necessary to apply maintenance periodically.
The period dedicated to the maintenance of the product has to be defined by the user and depends on the type of application and on the working conditions the product is exposed to.

6.1 Ordinary - Preventive maintenance
First, the product should be well cleaned and the area where it is installed as well, then you should check and verify the following steps:
- Absence of breakage or various damage on the products.
- Absence of leakage in general.
- Correctness of tightening torque of the adapters.
- Check the level of circuit contamination.
- The connected parts or the parts in movement should be greased with grease compatible with the seals assembled in the products.
- The replacement of the coupling should be planned in accordance with the requested endurance for the specific application.

6.2 Repair
In case of reparation of the products it is recommended to follow Stucchi's specific instructions and use spare parts, tools and documentation supplied by Stucchi only.
Please contact Stucchi customer service for the above specific information.

IT IS THE RESPONSIBILITY OF THE USER TO SELECT, INSTALL AND USE THE QUICK RELEASE COUPLING IN THE CORRECT WAY.

For more information please contact the Stucchi customer service.

PATENTED

SERIES: **A**

INTERCHANGE: ISO 16028 and NFPA T3.20.15 (HTMA)

MAIN APPLICATIONS

- Mobile construction equipment
- Agricultural equipment
- Hydraulic tools
- Industrial equipment
- Vehicles

Series "A" is the evolution of Stucchi technology and quality applied to flat face couplings. The series has a internal design combined with a high resistance material to allow the achievement of higher operating pressure and minimal pressure drop. The modular structure allows the flexibility to offer several types of threads or special ports in order to satisfy diverse applications while maintaining a compact dimension. These features make series "A" couplings the leader in many hydraulics applications where high performance is necessary with the elimination of fluid loss and contamination in the circuit.

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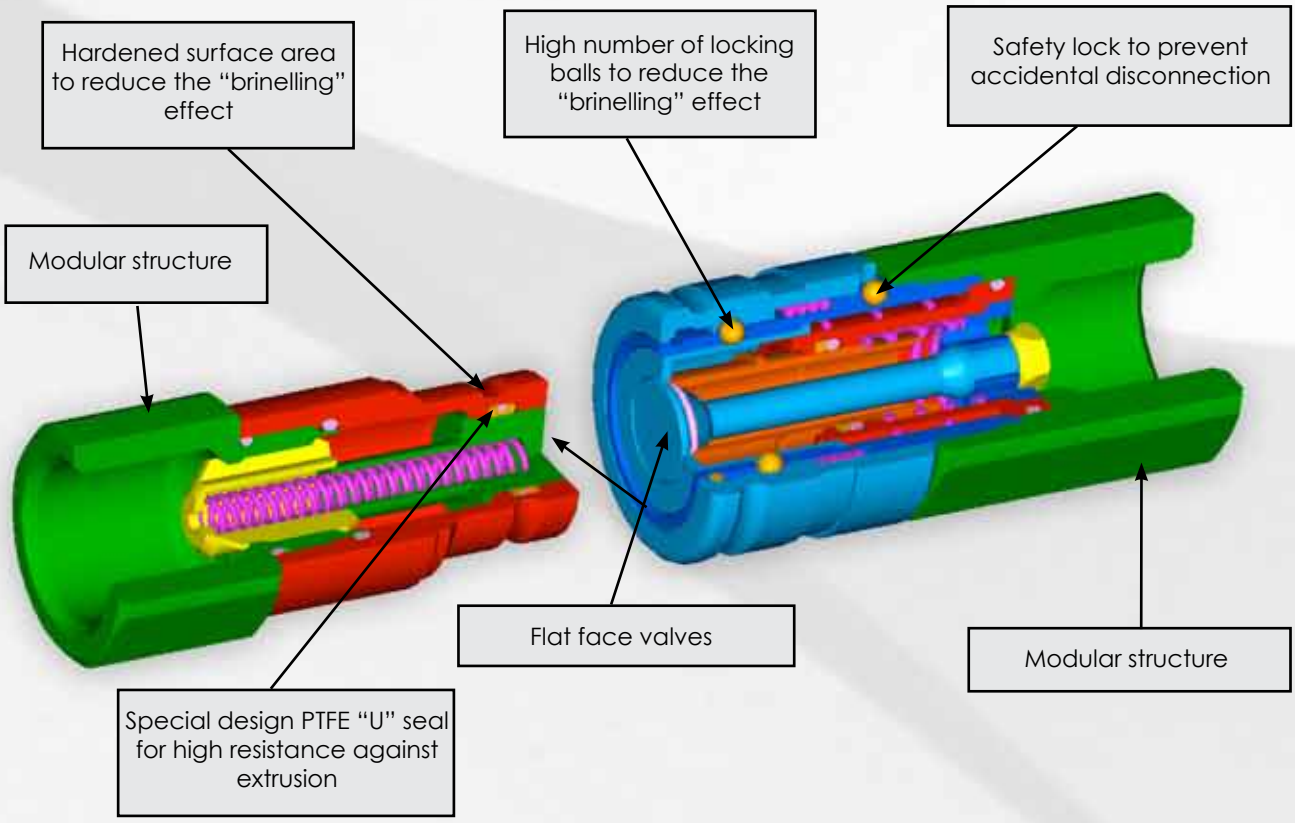
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: ISO 16028 (from size 6.3 to 25) HTMA (size 10)
- Valve system: Flat face
- Mechanical connection: Locking balls
- Connection system: Push to connect
- Disconnection system: Pulling back the sleeve of the female
- Connection with residual pressure: Not allowed
- Disconnection with residual pressure: Not allowed
- Threads available: BSP, NPT, SAE
- Threads on request: Metrics DIN, ORFS, and others
- Construction material: High resistance carbon steel
- Surface treatment: CrIII zinc plated
- External springs: AISI 302
- Internal springs: C72 steel
- Locking ball material: Hard steel 100 C6
- Seals: standard in NBR (Nitrile)
- Seals on request: Viton and others
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Internal valve design creates minimal pressure drop, maintaining circuit efficiency in the system
- The modular design allows flexibility with the range of port configurations.
- Good resistance at impulse pressures.
- Compact slim design.
- Safe and simple to use.

HOW TO USE

- Before to couple clean the flat mating surface of quick coupling to avoid the inclusion of dirty in the circuit.
- To couple push the male half towards the female half or vice versa.
- After connection turn the external sleeve to engage lock function, to prevent accidental disconnection.
- To uncouple turn the external sleeve until the sleeve lock groove corresponds with the safety lock ball and pull back the sleeve.

WARNING!

- Do not use the female coupling disconnected with impulse pressure at high frequency.
- Do not couple-uncouple with flow and/or pressure in the circuit.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps.

PERFORMANCE

Description	Size	ISO Size	Rated Flow		Max. flow suggested		Connect force		Disconnect force		Spillage*
	Inch	mm	l/min	GPM	l/min	GPM	N	lbf	N	lbf	ml
A4	1/8	-	3	0,80	6	1,59	120	27,00	25	5,63	0,001
A7	1/4	6,3	12	3,18	24	6,36	150	33,75	45	10,13	0,006
A9	3/8	10,0	23	6,10	46	12,19	170	38,25	40	9,00	0,012
A13	1/2	12,5	45	11,93	90	23,85	190	42,75	50	11,25	0,020
A15	5/8	16,0	74	19,61	148	39,22	190	42,75	55	12,38	0,026
A17	3/4	19,0	100	26,50	200	53,00	220	49,50	70	15,75	0,032
A21	1	25,0	189	50,09	378	100,17	250	56,25	75	16,88	0,035
A25	1-1/4	-	225	59,63	450	119,25	350	78,75	90	20,25	0,170
A30	1-1/2	-	288	76,32	750	198,75	390	87,75	70	15,75	0,050

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
A4	42	6090	42	6090	42	6090	126	18270	126	18270	126	18270
A7	42	6090	42	6090	42	6090	126	18270	126	18270	126	18270
A9	35	5075	35	5075	35	5075	100	14500	100	14500	100	14500
A13	33	4785	33	4785	33	4785	100	14500	100	14500	100	14500
A15	33	4785	33	4785	33	4785	100	14500	100	14500	100	14500
A17	33	4785	33	4785	33	4785	100	14500	100	14500	100	14500
A21	30	4350	30	4350	30	4350	80	11600	80	11600	80	11600
A25	30	4350	30	4350	30	4350	80	11600	80	11600	80	11600
A30	27	3915	27	3915	27	3915	80	11600	80	11600	70	10150

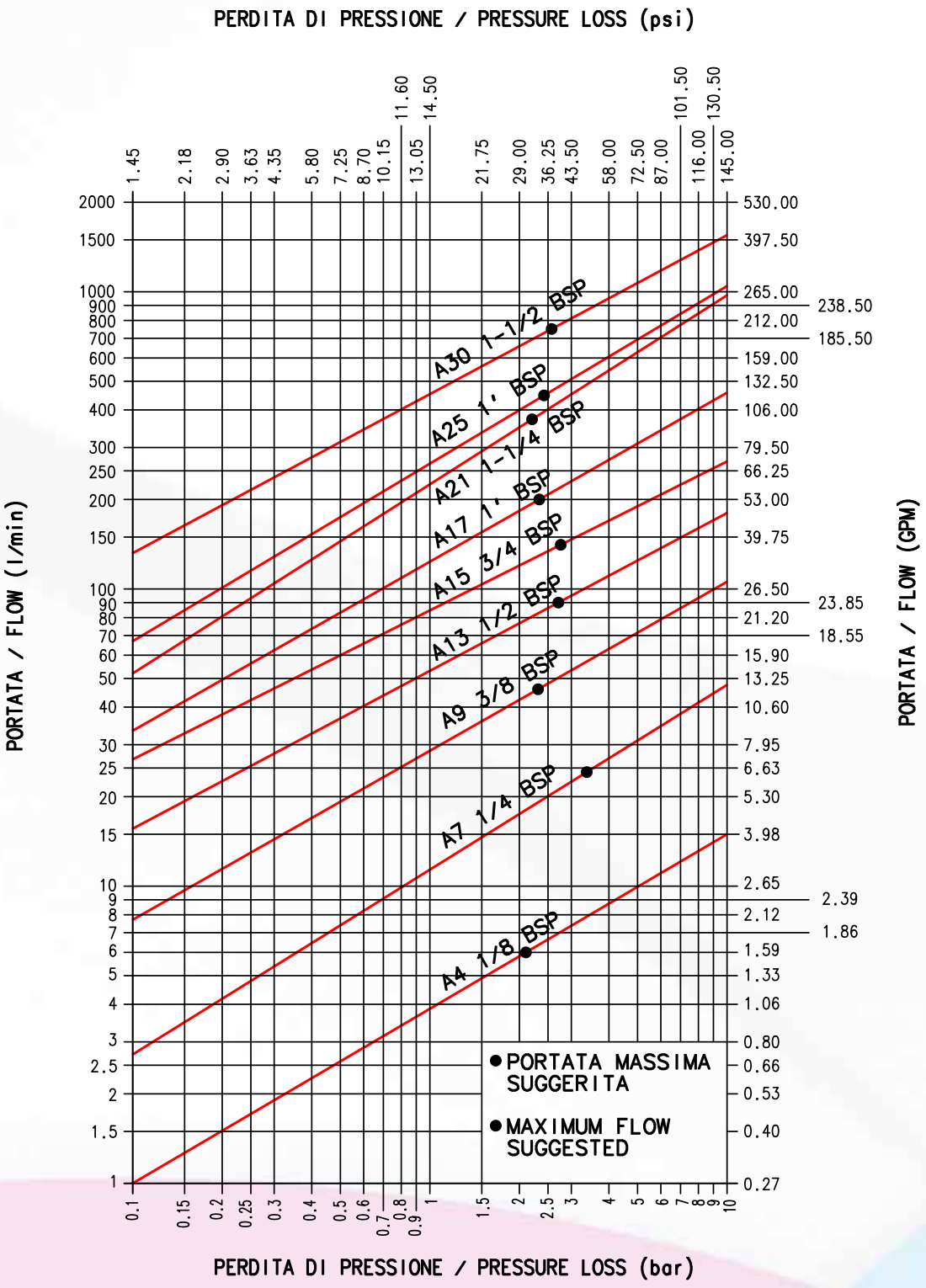
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle.

- Temperature range:
- Standard seals NBR (Nitrile): from -20 °C to +100 °C (from -4 °F to +212 °F).
- VITON seals: form -15°C to +180°C (from +5 °F to +356 °F).

- Tests:
- The couplings have been tested at impulse with max. operating pressure for 100.000 impulses in according with ISO 7241-2.

PRESSURE DROP

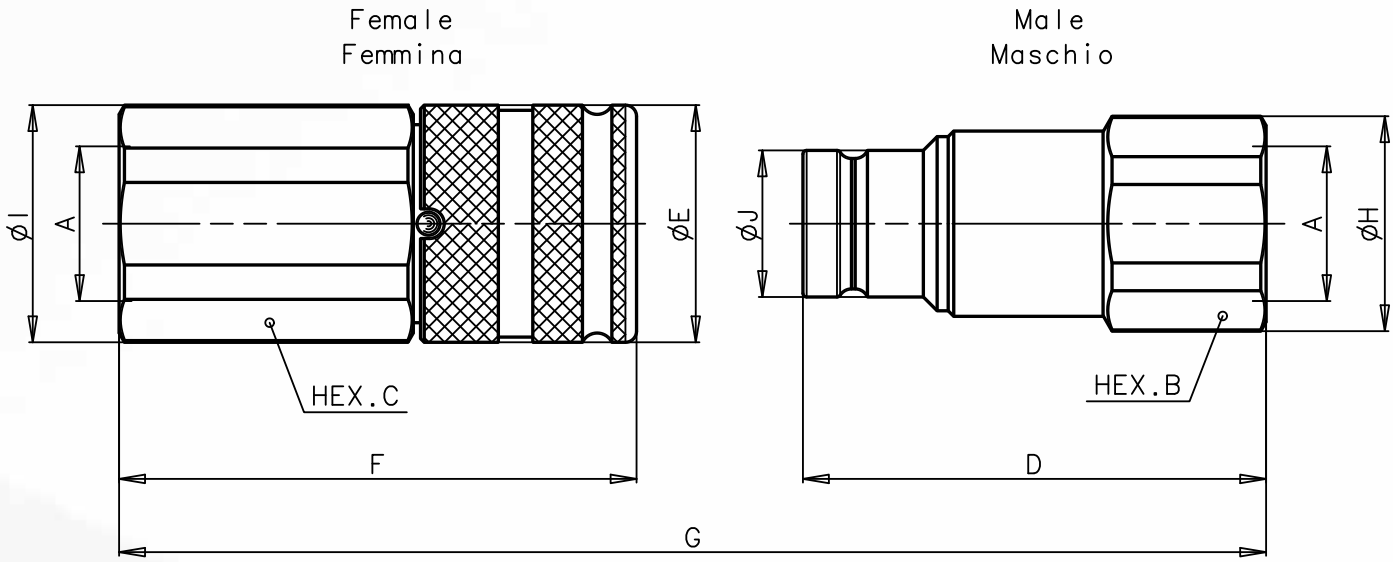
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

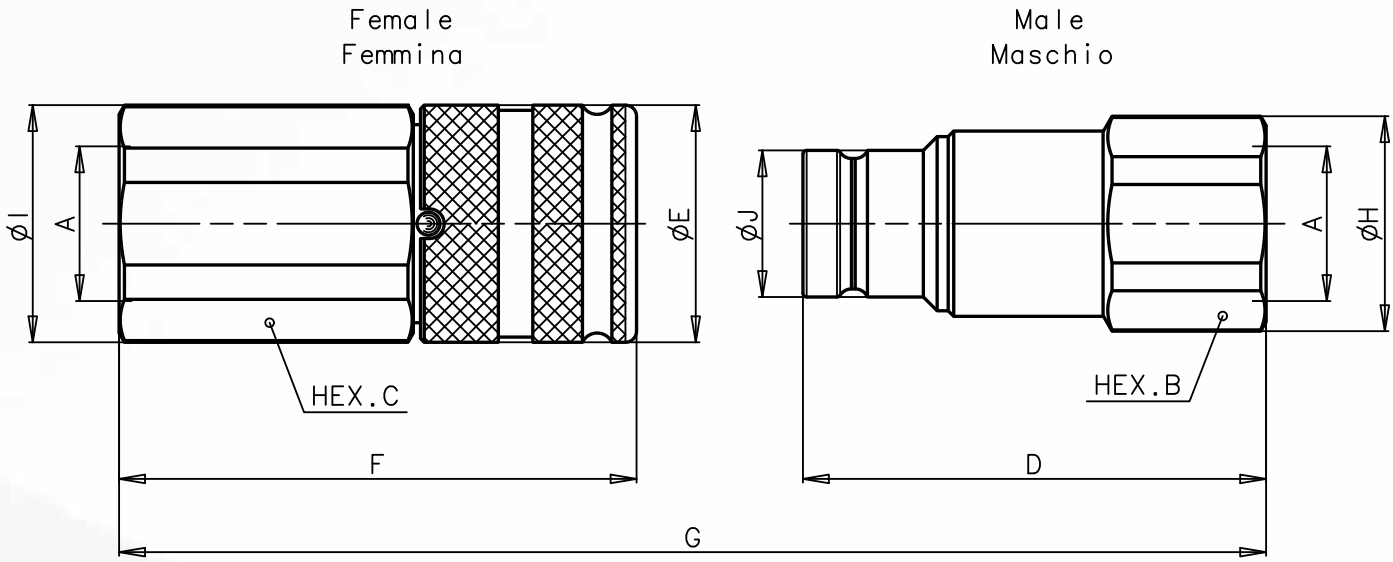
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
A4 1/8 BSP	1/8	mm	17	19	36,3	20	40	68,4	18,5	20,5	11,6	Kg	0,038	0,073
		Inch	0,67	0,75	1,43	0,79	1,57	2,69	0,73	0,81	0,46	lb	0,08	0,16
A7 1/4 BSP	1/4	mm	22	27	47,9	28	53,1	90,2	23,8	29	16,1	Kg	0,086	0,187
		Inch	0,87	1,06	1,89	1,10	2,09	3,55	0,94	1,14	0,63	lb	0,19	0,41
A9 3/8 BSP	3/8	mm	27	30	60	32	64,8	108,8	29	32	19,7	Kg	0,146	0,273
		Inch	1,06	1,18	2,36	1,26	2,55	4,28	1,14	1,26	0,78	lb	0,32	0,60
A9 1/2 BSP	1/2	mm	27	30	62,5	32	69,8	116,3	29	32	19,7	Kg	0,138	0,278
		Inch	1,06	1,18	2,46	1,26	2,75	4,58	1,14	1,26	0,78	lb	0,30	0,61
A13 1/2 BSP	1/2	mm	36	36	68	38	76,8	127,5	40	40	24,5	Kg	0,235	0,452
		Inch	1,42	1,42	2,68	1,50	3,02	5,02	1,57	1,57	0,96	lb	0,52	1,00
A13 3/4 BSP	3/4	mm	36	36	70,5	38	83,8	137	40	40	24,5	Kg	0,273	0,462
		Inch	1,42	1,42	2,78	1,50	3,30	5,39	1,57	1,57	0,96	lb	0,60	1,02
A15 3/4 BSP	3/4	mm	36	41	73	42	84	139,4	38,5	44,8	27	Kg	0,299	0,626
		Inch	1,42	1,61	2,87	1,65	3,31	5,49	1,52	1,76	1,06	lb	0,66	1,38
A17 3/4 BSP	3/4	mm	46	46	83,7	48	96,8	158,5	49,8	49,8	30	Kg	0,525	0,970
		Inch	1,81	1,81	3,30	1,89	3,81	6,24	1,96	1,96	1,18	lb	1,16	2,14
A17 1 BSP	1	mm	46	46	83,7	48	98,8	160,5	49,8	49,8	30	Kg	0,475	0,937
		Inch	1,81	1,81	3,30	1,89	3,89	6,32	1,96	1,96	1,18	lb	1,05	2,07
A21 1 BSP	1	mm	55	55	96,8	55	104,8	178,6	59,8	59,8	36	Kg	0,890	1,415
		Inch	2,17	2,17	3,81	2,17	4,13	7,03	2,35	2,35	1,42	lb	1,96	3,12
A21 1-1/4 BSP	1-1/4	mm	55	55	90	55	105,8	172,8	59,8	59,8	36	Kg	0,706	1,312
		Inch	2,17	2,17	3,54	2,17	4,17	6,80	2,35	2,35	1,42	lb	1,56	2,89
A25 1 BSP	1	mm	55	55	100	65	120,1	196,8	59,8	65	44	Kg	1,130	2,090
		Inch	2,17	2,17	3,94	2,56	4,73	7,75	2,35	2,56	1,73	lb	2,49	4,61
A25 1-1/4 BSP	1-1/4	mm	55	55	105	65	125,1	206,8	59,8	65	44	Kg	1,085	2,070
		Inch	2,17	2,17	4,13	2,56	4,93	8,14	2,35	2,56	1,73	lb	2,39	4,56
A30 1-1/2 BSP	1-1/2	mm	65	65	111,1	80	132,4	214,9	69,8	82	57	Kg	1,665	3,140
		Inch	2,56	2,56	4,37	3,15	5,21	8,46	2,75	3,23	2,24	lb	3,67	6,92

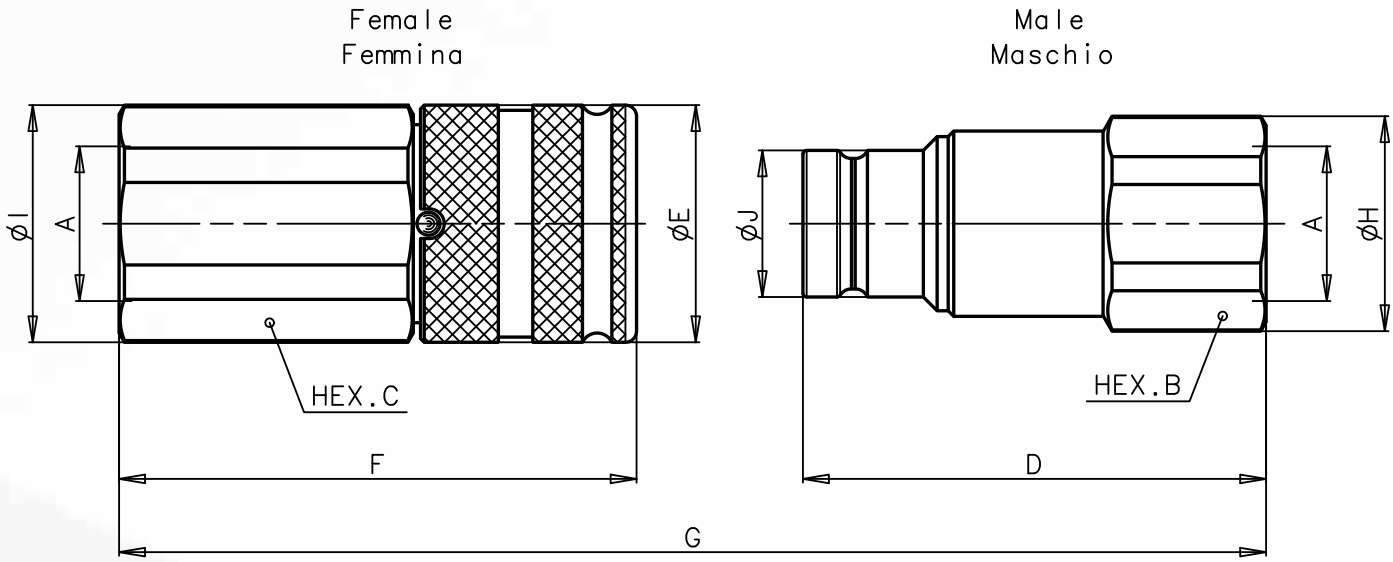
OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
A4 1/8 NPT	1/8	mm	17	19	36,3	20	40	68,4	18,5	20,5	11,6	Kg	0,038	0,073
		Inch	0,67	0,75	1,43	0,79	1,57	2,69	0,73	0,81	0,46	lb	0,08	0,16
A7 1/4 NPT	1/4	mm	22	27	47,9	28	53,1	90,2	23,8	29	16,1	Kg	0,088	0,187
		Inch	0,87	1,06	1,89	1,10	2,09	3,55	0,94	1,14	0,63	lb	0,19	0,41
A9 3/8 NPT	3/8	mm	27	30	60	32	64,8	108,8	29	32	19,7	Kg	0,150	0,273
		Inch	1,06	1,18	2,36	1,26	2,55	4,28	1,14	1,26	0,78	lb	0,33	0,60
A9 1/2 NPT	1/2	mm	27	30	62,5	32	69,8	116,3	29	32	19,7	Kg	0,138	0,278
		Inch	1,06	1,18	2,46	1,26	2,75	4,58	1,14	1,26	0,78	lb	0,30	0,61
A13 1/2 NPT	1/2	mm	36	36	68	38	76,8	127,5	40	40	24,5	Kg	0,295	0,452
		Inch	1,42	1,42	2,68	1,50	3,02	5,02	1,57	1,57	0,96	lb	0,65	1,00
A13 3/4 NPT	3/4	mm	36	36	70,5	38	83,8	137	40	40	24,5	Kg	0,273	0,469
		Inch	1,42	1,42	2,78	1,50	3,30	5,39	1,57	1,57	0,96	lb	0,60	1,03
A15 3/4 NPT	3/4	mm	36	41	73	42	84	139,4	38,5	44,8	27	Kg	0,292	0,631
		Inch	1,42	1,61	2,87	1,65	3,31	5,49	1,52	1,76	1,06	lb	0,64	1,39
A17 3/4 NPT	3/4	mm	46	46	83,7	48	95,8	157,5	49,8	49,8	30	Kg	0,535	0,960
		Inch	1,81	1,81	3,30	1,89	3,77	6,20	1,96	1,96	1,18	lb	1,18	2,12
A17 1 NPT	1	mm	46	46	83,7	48	98,8	160,5	49,8	49,8	30	Kg	0,473	0,931
		Inch	1,81	1,81	3,30	1,89	3,89	6,32	1,96	1,96	1,18	lb	1,04	2,05
A21 1 NPT	1	mm	55	55	96,8	55	104,8	178,6	59,8	59,8	36	Kg	0,900	1,430
		Inch	2,17	2,17	3,81	2,17	4,13	7,03	2,35	2,35	1,42	lb	1,98	3,15
A21 1-1/4 NPT	1-1/4	mm	55	55	90	55	105,8	172,8	59,8	59,8	36	Kg	0,700	1,312
		Inch	2,17	2,17	3,54	2,17	4,17	6,80	2,35	2,35	1,42	lb	1,54	2,89
A25 1 NPT	1	mm	55	55	105	65	125,1	206,8	59,8	65	44	Kg	1,130	2,090
		Inch	2,17	2,17	4,13	2,56	4,93	8,14	2,35	2,56	1,73	lb	2,49	4,61
A25 1-1/4 NPT	1-1/4	mm	55	55	105	65	125,1	206,8	59,8	65	44	Kg	1,105	2,100
		Inch	2,17	2,17	4,13	2,56	4,93	8,14	2,35	2,56	1,73	lb	2,44	4,63
A30 1-1/2 NPT	1-1/2	mm	65	65	111,1	80	132,4	214,9	69,8	82	57	Kg	1,665	3,140
		Inch	2,56	2,56	4,37	3,15	5,21	8,46	2,75	3,23	2,24	lb	3,67	6,92

OVERALL DIMENSIONS



FEMALE SAE THREAD (SAE J1926-1)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
A4 3/16 SAE	3/8-24UNF	mm	17	19	36,3	20	40	68,4	18,5	20,5	11,6	Kg	0,038	0,075
		Inch	0,67	0,75	1,43	0,79	1,57	2,69	0,73	0,81	0,46	lb	0,08	0,17
A7 3/8 SAE	9/16-18UNF	mm	22	27	50,9	28	56,1	96,2	23,8	29	16,1	Kg	0,091	0,200
		Inch	0,87	1,06	2,00	1,10	2,21	3,79	0,94	1,14	0,63	lb	0,20	0,44
A9 3/8 SAE	9/16-18UNF	mm	27	30	60	32	64,8	108,8	29	32	19,7	Kg	0,084	0,273
		Inch	1,06	1,18	2,36	1,26	2,55	4,28	1,14	1,26	0,78	lb	0,19	0,60
A9 1/2 SAE	3/4-16UNF	mm	27	30	62,5	32	69,8	116,3	29	32	19,7	Kg	0,145	0,285
		Inch	1,06	1,18	2,46	1,26	2,75	4,58	1,14	1,26	0,78	lb	0,32	0,63
A9 5/8 SAE	7/8-14UNF	mm	30	30	65,5	32	71,8	121,3	32	32	19,7	Kg	0,165	0,275
		Inch	1,18	1,18	2,58	1,26	2,83	4,78	1,26	1,26	0,78	lb	0,36	0,61
A13 5/8 SAE	7/8-14UNF	mm	36	36	70	38	78,8	131,5	40	40	24,5	Kg	0,294	0,456
		Inch	1,42	1,42	2,76	1,50	3,10	5,18	1,57	1,57	0,96	lb	0,65	1,01
A13 3/4 SAE	1-1/16-12UN	mm	36	36	72,5	38	83,8	139	40	40	24,5	Kg	0,277	0,462
		Inch	1,42	1,42	2,85	1,50	3,30	5,47	1,57	1,57	0,96	lb	0,61	1,02
A15 3/4 SAE	1-1/16-12UN	mm	36	41	73,0	42	84	139,4	38,5	44,8	27	Kg	0,295	0,625
		Inch	1,42	1,61	2,87	1,65	3,31	5,49	1,52	1,76	1,06	lb	0,65	1,38
A17 3/4 SAE	1-1/16-12UN	mm	46	46	83,7	48	98,8	160,5	49,8	49,8	30	Kg	0,520	0,985
		Inch	1,81	1,81	3,30	1,89	3,89	6,32	1,96	1,96	1,18	lb	1,15	2,17
A17 1 SAE	1-5/16-12UN	mm	46	46	83,7	48	98,8	160,5	49,8	49,8	30	Kg	0,467	0,928
		Inch	1,81	1,81	3,30	1,89	3,89	6,32	1,96	1,96	1,18	lb	1,03	2,05
A21 1 SAE	1-5/16-12UN	mm	55	55	96,8	55	104,8	178,6	59,8	59,8	36	Kg	0,890	1,415
		Inch	2,17	2,17	3,81	2,17	4,13	7,03	2,35	2,35	1,42	lb	1,96	3,12
A21 1-1/4 SAE	1-5/8-12UN	mm	55	55	90	55	105,8	172,8	59,8	59,8	36	Kg	0,706	1,320
		Inch	2,17	2,17	3,54	2,17	4,17	6,80	2,35	2,35	1,42	lb	1,56	2,91
A25 1 SAE	1-5/16-12UN	mm	55	55	105	65	125,1	206,8	59,8	65	44	Kg	1,130	2,090
		Inch	2,17	2,17	4,13	2,56	4,93	8,14	2,35	2,56	1,73	lb	2,49	4,61
A25 1-1/4 SAE	1-5/8-12UN	mm	55	55	105	65	125,1	206,8	59,8	65	44	Kg	1,085	2,070
		Inch	2,17	2,17	4,13	2,56	4,93	8,14	2,35	2,56	1,73	lb	2,39	4,56
A30 1-1/2 SAE	1-7/8-12UN	mm	65	65	111,1	80	132,4	214,9	69,8	82	57	Kg	1,660	3,160
		Inch	2,56	2,56	4,37	3,15	5,21	8,46	2,75	3,23	2,24	lb	3,66	6,97

SERIES: **FIRG**

INTERCHANGE: ISO 16028 and NFPA T3.20.15 (HTMA)

MAIN APPLICATIONS

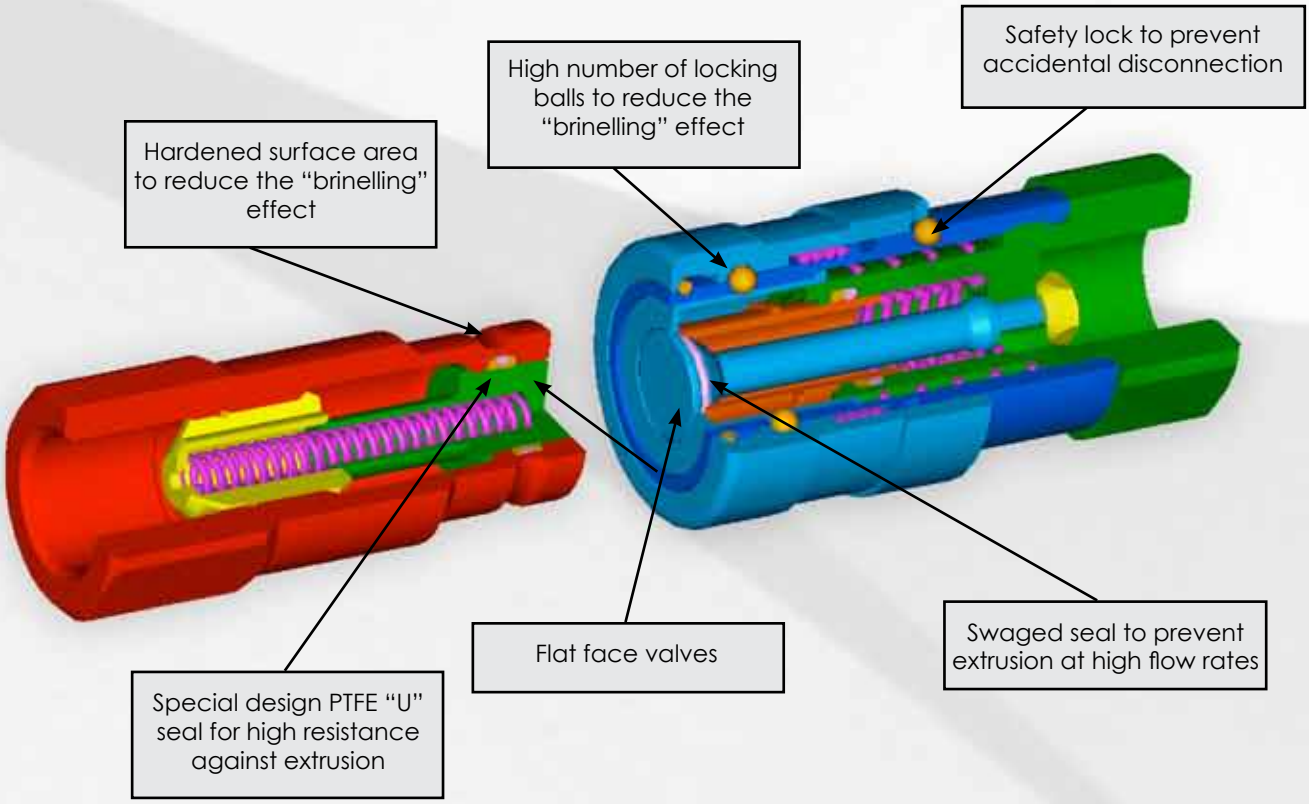
- Mobile construction equipment
- Hydraulic tools
- Vehicles
- Industrial equipment

"FIRG" is the "**original one**" of the flat face coupling series. Created in 1983, the "FIRG" series has represented a great innovation in the quick couplings field. Used in a wide range of hydraulic applications, the "FIRG" series over time has become the leading series for the realization of ISO 16028 interchangeability. Based on the durable performance and many benefits the series offers, "FIRG" series is most frequently used and approved in the world-wide hydraulic equipment manufacturer's market.
It finds approval in all the applications where fluid loss and contamination of the hydraulic circuit needs to be eliminated.

Stucchi®
A CONSTANT FLOW OF SOLUTIONS

TECHNICAL FEATURES AND OPTIONS

- Interchangeability: ISO 16028 (from size 6.3 to 25)
  HTMA (size 10)
- Valve system: Flat face
- Mechanical connection: Locking balls
- Connection system: Pushing one half towards the other
- Disconnection system: Pulling back the sleeve of female
- Connection with residual pressure: Not allowed
- Disconnection with residual pressure: Not allowed
- Threads available: BSP, NPT, SAE
- Construction material: Carbon steel
- Surface treatment: CrIII zinc plated
- External springs: AISI 302
- Internal springs: C72 steel
- Balls: Hard steel 100 C6
- Seals: standard in NBR (Nitrile)
- Seals on request: VITON or others
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Linear flow reduces internal turbulence and pressure drop, maintaining circuit efficiency in the entire system.
- Good resistance at impulse pressures.
- Compact slim design.
- Safe and simple to use.

HOW TO USE

- Before to couple clean the flat mating surface of quick coupling to avoid the inclusion of dirty in the circuit.
- To couple push the male half towards the female half or vice versa.
- After connection turn the external sleeve to engage lock function, to prevent accidental disconnection.
- To uncouple turn the external sleeve until the sleeve lock groove corresponds with the safety lock ball and pull back the sleeve.

WARNING!

- Do not use the female coupling disconnected with impulse pressure.
- Do not couple-uncouple with flow and/or pressure in the circuit.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps.

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect force		Disconnect force		Spillage*
	Inch	mm	l/min	GPM	l/min	GPM	N	lbf	N	lbf	ml
FIRG14	1/4	6,3	12	3,18	24	6,36	140	31,50	40	9,00	0,006
FIRG38-12	3/8	10,0	23	6,10	46	12,19	150	33,75	40	9,00	0,012
FIRG12A-34	1/2	12,5	45	11,93	90	23,85	160	36,00	60	13,50	0,020
FIRG34B	5/8	16,0	74	19,61	148	39,22	180	40,50	55	12,38	0,026
FIRG34A	3/4	19,0	100	26,50	170	45,05	270	60,75	90	20,25	0,032
FIRG100	3/4	19,0	100	26,50	200	53,00	240	54,00	65	14,63	0,032
FIRG114	1	25,0	189	50,09	378	100,17	310	69,75	100	22,50	0,035
FIRG112	1-1/2	-	288	76,32	750	198,75	390	87,75	90	20,25	0,050
FIRG200	2	-	379	100,44	1000	265,00	470	105,75	100	22,50	0,100

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
FIRG14	30	4350	42	6090	12	1740	120	17400	126	18270	48	6960
FIRG38-12	30	4350	30	4350	12	1740	120	17400	120	17400	48	6960
FIRG12A-34	25	3625	25	3625	10	1450	100	14500	100	14500	40	5800
FIRG34B	25	3625	22	3190	10	1450	100	14500	88	12760	40	5800
FIRG34A	33	4785	33	4785	33	4785	100	14500	100	14500	100	14500
FIRG100	25	3625	20	2900	10	1450	100	14500	80	11600	40	5800
FIRG114	25	3625	20	2900	10	1450	100	14500	80	11600	40	5800
FIRG112	20	2900	27	3915	8	1160	80	11600	80	11600	32	4640
FIRG200	20	2900	16	2320	8	1160	80	11600	64	9280	32	4640

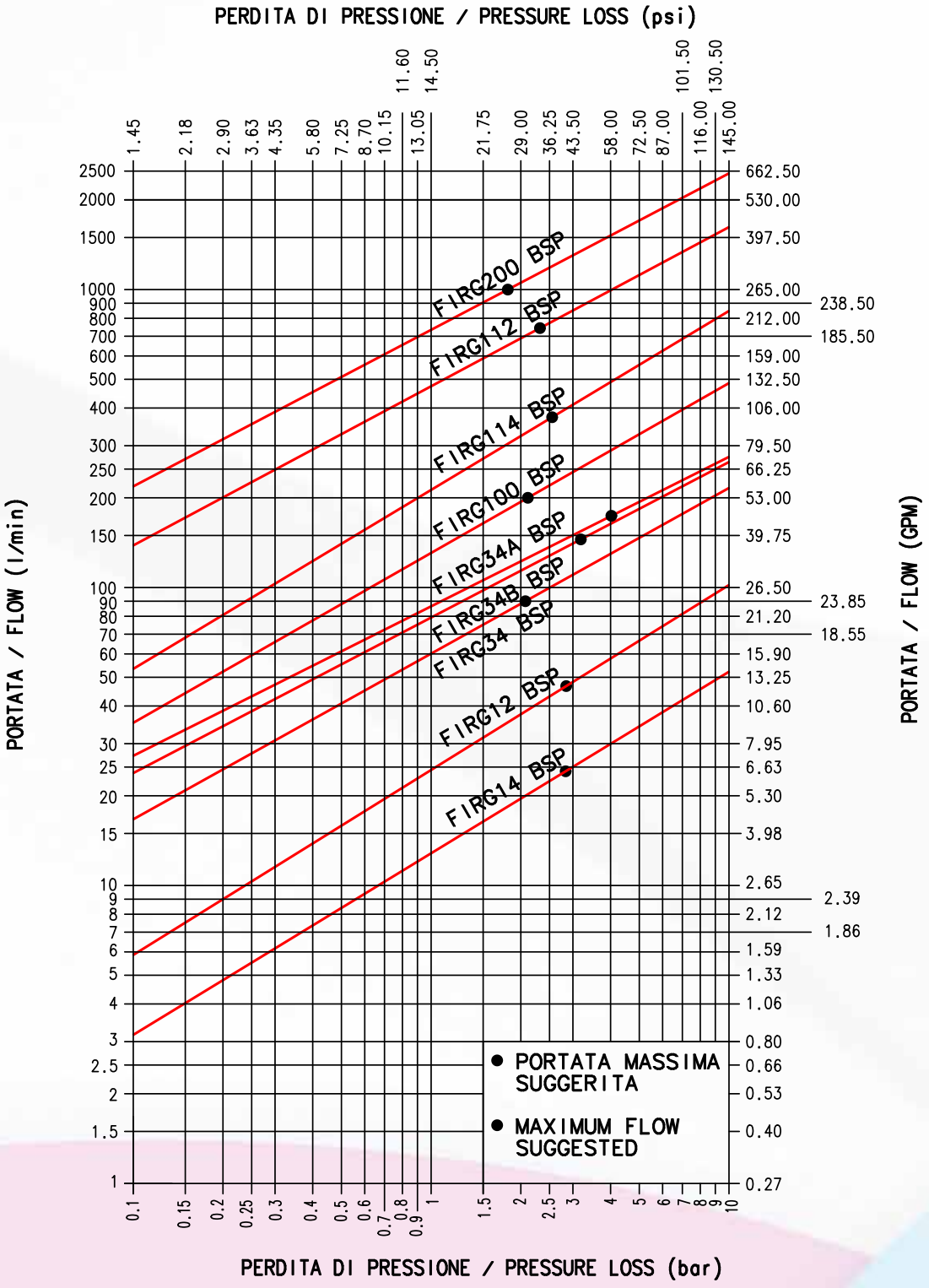
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle.

- Temperature range:
- Standard seals NBR (Nitrile): from -20 °C to +100 °C (from -4 °F to +212 °F).
- VITON seals: from -15°C to +180°C (from +5 °F to +356 °F).

- Tests:
- The couplings have been tested at impulse with max. operating pressure for 100.000 impulses in according with ISO 7241-2.

PRESSURE DROP

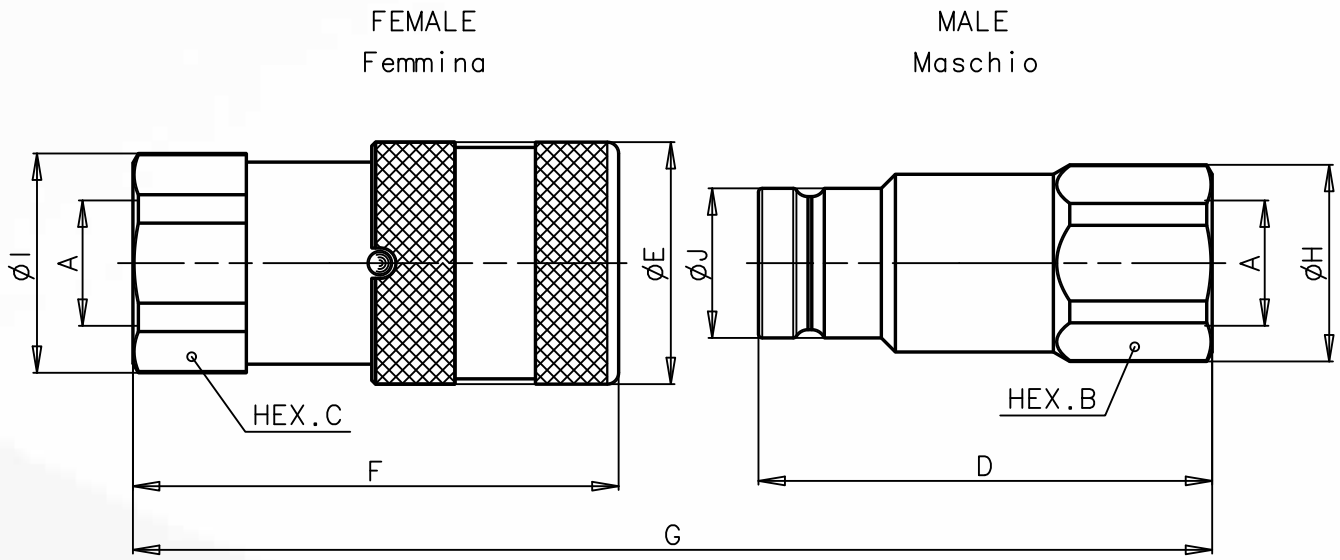
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

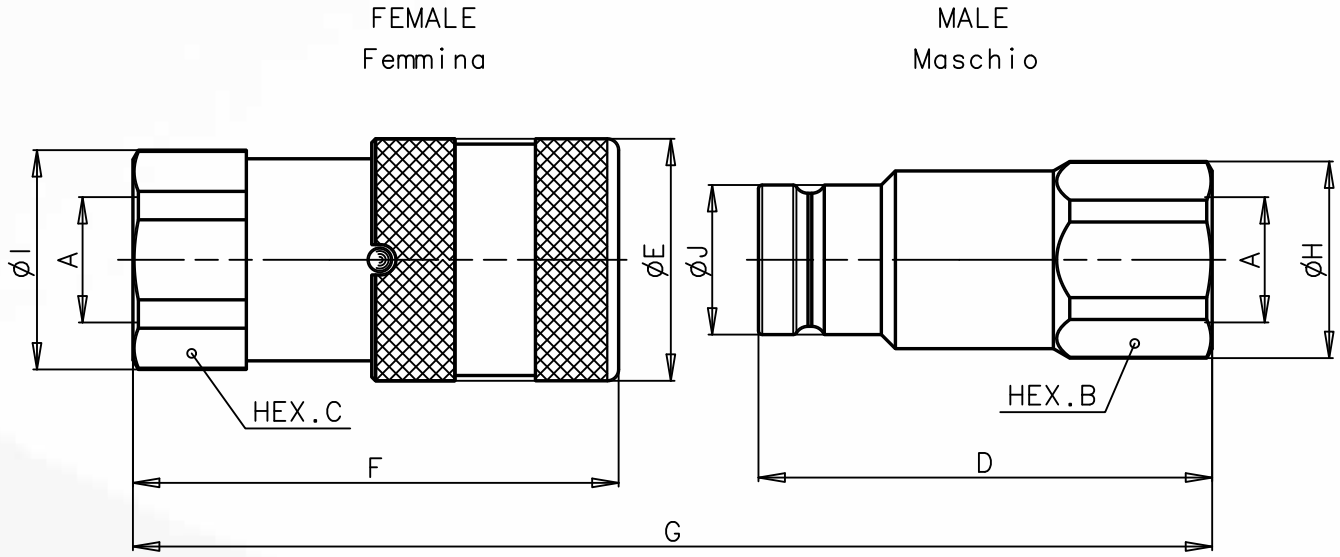
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FIRG14 BSP	1/4	mm	22	22	47,9	28	48,1	85,2	23,8	23,8	16,1	Kg	0,086	0,140
		Inch	0,87	0,87	1,89	1,10	1,89	3,35	0,94	0,94	0,63	lb	0,19	0,31
FIRG38 BSP	3/8	mm	24	27	60	32	64,2	108,7	26	29	19,7	Kg	0,121	0,235
		Inch	0,94	1,06	2,36	1,26	2,53	4,28	1,02	1,14	0,78	lb	0,27	0,52
FIRG12 BSP	1/2	mm	27	27	62,5	32	69,2	116,2	29	29	19,7	Kg	0,128	0,237
		Inch	1,06	1,06	2,46	1,26	2,72	4,57	1,14	1,14	0,78	lb	0,28	0,52
FIRG12A BSP	1/2	mm	32	32	68	38	73,8	124,5	33,8	33,8	24,5	Kg	0,233	0,375
		Inch	1,26	1,26	2,68	1,50	2,91	4,90	1,33	1,33	0,96	lb	0,51	0,83
FIRG34 BSP	3/4	mm	36	36	70,5	38	80,8	134	38,5	38,5	24,5	Kg	0,227	0,413
		Inch	1,42	1,42	2,78	1,50	3,18	5,28	1,52	1,52	0,96	lb	0,50	0,91
FIRG34B BSP	3/4	mm	36	36	70,5	42	78,5	131,4	38,5	38,5	27	Kg	0,268	0,479
		Inch	1,42	1,42	2,78	1,65	3,09	5,17	1,52	1,52	1,06	lb	0,59	1,06
FIRG34A BSP	3/4	mm	41	41	82,3	48	88,7	149	44,8	44,8	30	Kg	0,445	0,750
		Inch	1,61	1,61	3,24	1,89	3,49	5,87	1,76	1,76	1,18	lb	0,98	1,65
FIRG100 BSP	1	mm	45	45	82,3	48	93,2	153,5	47,8	47,8	30	Kg	0,394	0,767
		Inch	1,77	1,77	3,24	1,89	3,67	6,04	1,88	1,88	1,18	lb	0,87	1,69
FIRG114 BSP	1-1/4	mm	55	55	89,8	55	106	172,8	59,8	59,8	36	Kg	0,641	1,215
		Inch	2,17	2,17	3,54	2,17	4,17	6,80	2,35	2,35	1,42	lb	1,41	2,68
FIRG112 BSP	1-1/2	mm	65	65	111,1	80	132,4	214,9	69,8	72	57	Kg	1,665	2,820
		Inch	2,56	2,56	4,37	3,15	5,21	8,46	2,75	2,83	2,24	lb	3,67	6,22
FIRG200 BSP	2	mm	75	80	123,8	100	156,6	241,5	83,5	88,5	73	Kg	2,259	5,100
		Inch	2,95	3,15	4,87	3,94	6,17	9,51	3,29	3,48	2,87	lb	4,98	11,24

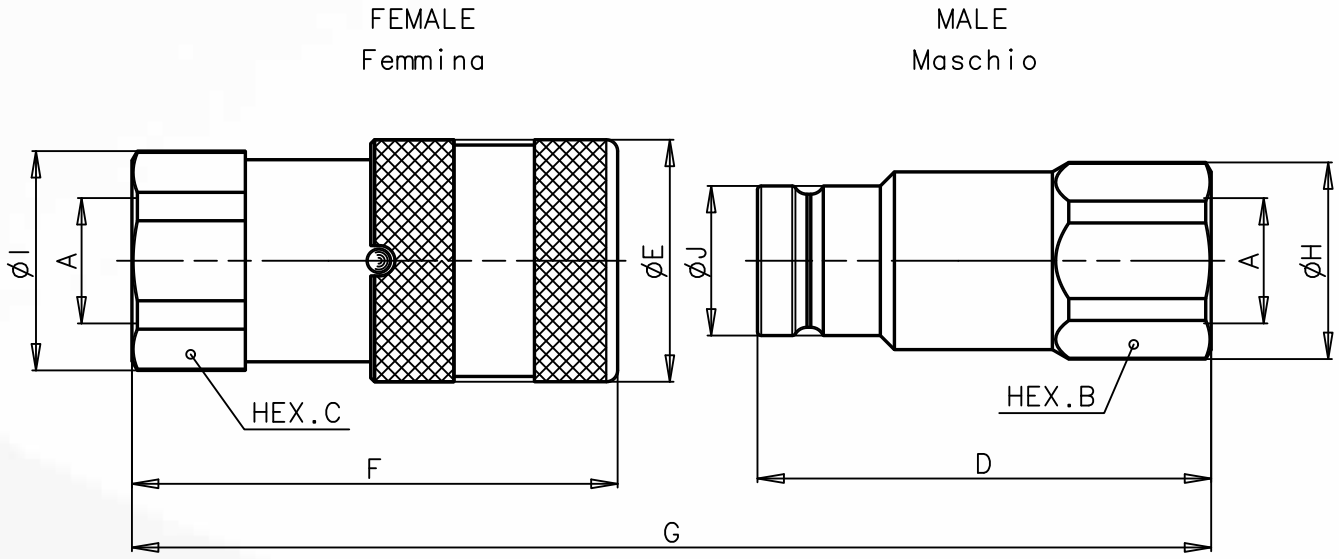
OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FIRG14 NPT	1/4	mm	22	22	47,9	28	48,1	85,2	23,8	23,8	16,1	Kg	0,088	0,140
		Inch	0,87	0,87	1,89	1,10	1,89	3,35	0,94	0,94	0,63	lb	0,19	0,31
FIRG38 NPT	3/8	mm	24	27	60	32	64,2	108,7	26	29	19,7	Kg	0,123	0,237
		Inch	0,94	1,06	2,36	1,26	2,53	4,28	1,02	1,14	0,78	lb	0,27	0,52
FIRG12 NPT	1/2	mm	27	27	62,5	32	69,2	116,2	29	29	19,7	Kg	0,130	0,240
		Inch	1,06	1,06	2,46	1,26	2,72	4,57	1,14	1,14	0,78	lb	0,29	0,53
FIRG12A NPT	1/2	mm	32	32	68	38	73,8	124,5	33,8	33,8	24,5	Kg	0,236	0,378
		Inch	1,26	1,26	2,68	1,50	2,91	4,90	1,33	1,33	0,96	lb	0,52	0,83
FIRG34 NPT	3/4	mm	36	36	70,5	38	80,8	134	38,5	38,5	24,5	Kg	0,234	0,420
		Inch	1,42	1,42	2,78	1,50	3,18	5,28	1,52	1,52	0,96	lb	0,52	0,93
FIRG34B NPT	3/4	mm	36	36	70,5	42	78,5	131,4	38,5	38,5	27	Kg	0,273	0,490
		Inch	1,42	1,42	2,78	1,65	3,09	5,17	1,52	1,52	1,06	lb	0,60	1,08
FIRG34A NPT	3/4	mm	41	41	82,3	48	88,7	149	44,8	44,8	30	Kg	0,450	0,755
		Inch	1,61	1,61	3,24	1,89	3,49	5,87	1,76	1,76	1,18	lb	0,99	1,66
FIRG100 NPT	1	mm	45	45	82,3	48	93,2	153,5	47,8	47,8	30	Kg	0,405	0,781
		Inch	1,77	1,77	3,24	1,89	3,67	6,04	1,88	1,88	1,18	lb	0,89	1,72
FIRG114 NPT	1-1/4	mm	55	55	89,8	55	106	172,8	59,8	59,8	36	Kg	0,662	1,215
		Inch	2,17	2,17	3,54	2,17	4,17	6,80	2,35	2,35	1,42	lb	1,46	2,68
FIRG112 NPT	1-1/2	mm	65	65	111,1	80	132,4	214,9	69,8	72	57	Kg	1,670	2,848
		Inch	2,56	2,56	4,37	3,15	5,21	8,46	2,75	2,83	2,24	lb	3,68	6,28
FIRG200 NPT	2	mm	75	80	123,8	100	156,6	241,5	83,5	88,5	73	Kg	2,259	5,100
		Inch	2,95	3,15	4,87	3,94	6,17	9,51	3,29	3,48	2,87	lb	4,98	11,24

OVERALL DIMENSIONS



FEMALE SAE THREAD (SAE J1926-1)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FIRG14 3/8 SAE	9/16- 18UNF	mm Inch	22 0,87	22 0,87	50,9 2,00	28 1,10	53,1 2,09	93,2 3,67	23,8 0,94	23,8 0,94	16,1 0,63	Kg lb	0,091 0,20	0,148 0,33
FIRG38 1/2 SAE	3/4-16 UNF	mm Inch	27 1,06	27 1,06	62,5 2,46	32 1,26	69,2 2,72	116,2 4,57	29 1,14	29 1,14	19,7 0,78	Kg lb	0,140 0,31	0,244 0,54
FIRG12 5/8 SAE	7/8-14 UNF	mm Inch	30 1,18	30 1,18	64 2,52	32 1,26	71,2 2,80	119,7 4,71	32 1,26	32 1,26	19,7 0,78	Kg lb	0,146 0,32	0,258 0,57
FIRG12A 5/8 SAE	7/8-14 UNF	mm Inch	32 1,26	32 1,26	70 2,76	38 1,50	76,3 3,00	129 5,08	33,8 1,33	33,8 1,33	24,5 0,96	Kg lb	0,231 0,51	0,378 0,83
FIRG34 SAE	1-1/16- 12 UN	mm Inch	36 1,42	36 1,42	72 2,83	38 1,50	83,3 3,28	138 5,43	38,5 1,52	38,5 1,52	24,5 0,96	Kg lb	0,231 0,51	0,421 0,93
FIRG34B SAE	1-1/16- 12 UN	mm Inch	36 1,42	36 1,42	72 2,83	42 1,65	83,5 3,29	137,9 5,43	38,5 1,52	38,5 1,52	27 1,06	Kg lb	0,267 0,59	0,497 1,10
FIRG34A SAE	1-1/16- 12 UN	mm Inch	41 1,61	41 1,61	82,3 3,24	48 1,89	88,7 3,49	149 5,87	44,8 1,76	44,8 1,76	30 1,18	Kg lb	0,440 0,97	0,745 1,64
FIRG100 SAE	1-5/16- 12 UN	mm Inch	45 1,77	45 1,77	82,3 3,24	48 1,89	93,2 3,67	153,5 6,04	47,8 1,88	47,8 1,88	30 1,18	Kg lb	0,394 0,87	0,767 1,69
FIRG114 SAE	1-5/8- 12 UN	mm Inch	55 2,17	55 2,17	89,8 3,54	55 2,17	106 4,17	172,8 6,80	59,8 2,35	59,8 2,35	36 1,42	Kg lb	0,641 1,41	1,215 2,68
FIRG112 SAE	1-7/8- 12 UN	mm Inch	65 2,56	65 2,56	111,1 4,37	80 3,15	132,4 5,21	214,9 8,46	69,8 2,75	72 2,83	57 2,24	Kg lb	1,655 3,65	2,820 6,22
FIRG200 SAE	2-1/2- 12 UN	mm Inch	75 2,95	80 3,15	123,8 4,87	100 3,94	156,6 6,17	241,5 9,51	83,5 3,29	88,5 3,48	73 2,87	Kg lb	2,259 4,98	5,100 11,24

SERIES: **APM**

PATENTED

INTERCHANGE: ISO 16028 and NFPA T3.20.15 (HTMA)

MAIN APPLICATIONS

- Mobile construction equipment
- Agricultural equipment
- Hydraulic tools
- Industrial equipment
- Vehicles

The "APM" male flat face coupling series is the Stucchi solution for the manual connection with residual pressure in the circuit. The couplings have a triple valve system: double internal pressure release valve and the flat face valve.
This system easily allows the connection of couplings with the presence of high internal residual pressure without fluid loss. Based on this main feature, "APM" couplings are the ideal solution to hydraulic applications where there is the requirement to connect the circuit with internal residual pressure.

Stucchi®
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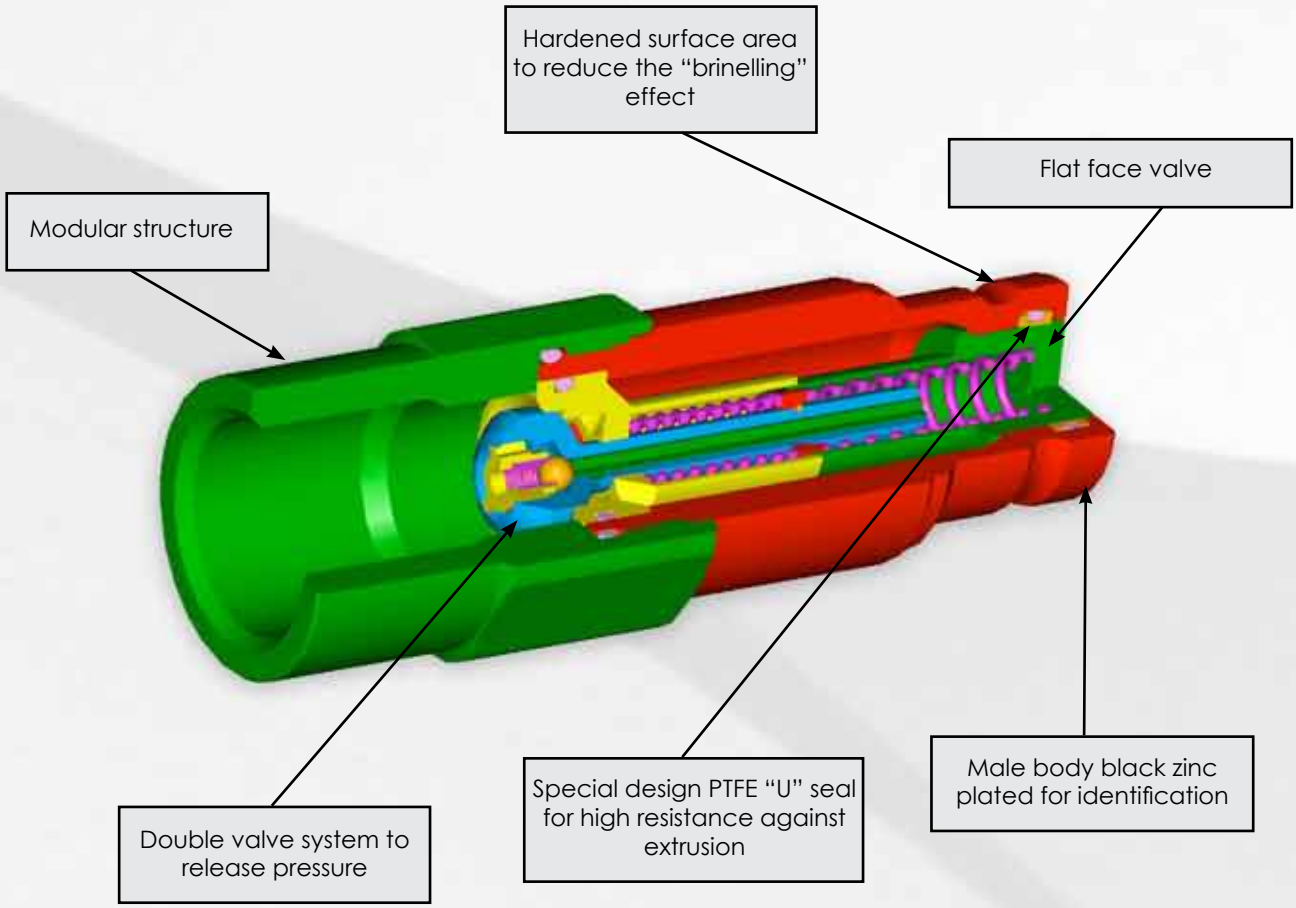
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: ISO 16028 (from size 10 to 25) HTMA (size 10)
- Valve system: Flat face
- Mechanical connection: Locking balls
- Connection system: Push to connect
- Disconnection system: Pulling back the sleeve of female
- Connection with residual pressure: Only in the APM male coupling, the female coupling must be to drain
- Disconnection with residual pressure: Not allowed
- Threads available: BSP, NPT, SAE
- Threads on request: Metrics DIN, ORFS or other
- Material: High grade carbon steel
- Surface treatment: CrIII zinc plated
- Internal springs: C72 steel
- Seals: standard in NBR (Nitrile)
- Anti-extrusion rings: PTFE
- On request: different materials and seals



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Internal pressure release valve system allows manual connection with high internal residual pressure.
- The modular design allows flexibility with the range of port configurations.
- Good resistance at impulse pressures.
- Compact slim design.
- Safe and simple to use.

HOW TO USE

- Before to couple clean the flat mating surface of quick coupling to avoid the inclusion of dirty in the circuit.
- To couple push the male half towards the female half or vice versa.
- After connection turn the external sleeve to engage lock function, to prevent accidental disconnection.
- To uncouple turn the external sleeve until the sleeve lock groove corresponds with the safety lock ball and pull back the sleeve.

WARNING!

- Do not couple-uncouple with flow in the circuit. Connection is allowed only with residual pressure trapped in the circuit.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps. The protection caps of "FIRG-A" series are suitable with male couplings "APM".
- It is important maintain a good cleanliness of circuit because a high grade of dirty could compromise the function of the internal double valve.

PERFORMANCE

Description	Size	ISO Size	Rated Flow		Max. flow suggested		Connect force° without pressure		Disconnect° force		Spillage *
	Inch	mm	l/min	GPM	l/min	GPM	N	lbf	N	lbf	ml
APM9	3/8	10,0	23	6,10	46	12,19	165	37,13	40	9,00	0,016
APM13	1/2	12,5	45	11,93	90	23,85	190	42,75	70	15,75	0,010
APM15	5/8	16,0	74	19,61	148	39,22	160	36,00	50	11,25	1,200
APM17	3/4	19,0	100	26,50	200	53,00	260	58,50	80	18,00	0,180
APM21	1	25,0	189	50,09	378	100,17	300	67,50	90	20,25	0,180
APM30	1-1/2	-	288	76,32	750	198,75	440	99,00	80	18,00	0,400

Description	Max. operating pressure				Burst pressure				Max. residual pressure	
	Coupled °		Male		Coupled °		Male			
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
APM9	35	5075	35	5075	100	14500	120	17400	30	4350
APM13	33	4785	33	4785	100	14500	120	17400	30	4350
APM15	33	4785	33	4785	100	14500	120	17400	30	4350
APM17	33	4785	33	4785	100	14500	120	17400	25	3625
APM21	30	4350	30	4350	80	11600	100	14500	25	3625
APM30	27	3915	27	3915	80	11600	100	14500	20	2900

* Spillage is an indicative value of the fluid loss per couple-uncouple cycle.
° Tested with female couplings "A" series

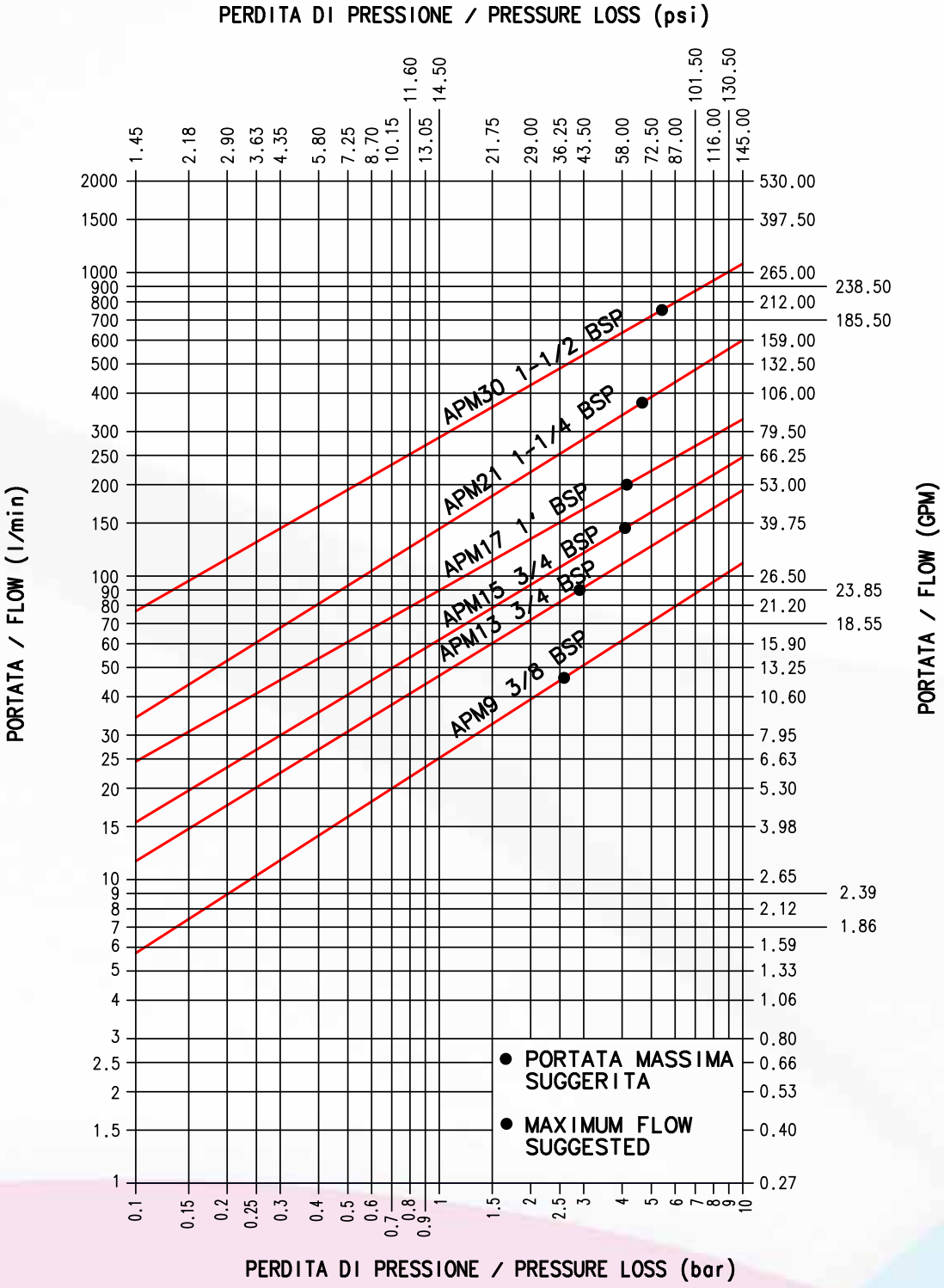
THEORETICAL CALCULATION OF CONNECT FORCE WITH RESIDUAL PRESSURE:
Fp (N) = Fi + (Pm x 5)
Fi = Connection force without residual pressure (N)
Pm = Residual pressure in the male coupling (MPa)
EXAMPLE:
To connect the male coupling APM13 with 20 Mpa of residual pressure, it is necessary the following force:
Fp = Fi + (Pm x 5) = 190 + (20 x 5) = 290 N

- Temperature range:
- Standard seals NBR (Nitrile): from -20 °C to +100 °C (from -4 °F to +212 °F).

- Tests:
- The couplings have been tested at impulse with max. operating pressure for 100.000 impulses in according with ISO 7241-2.

PRESSURE DROP

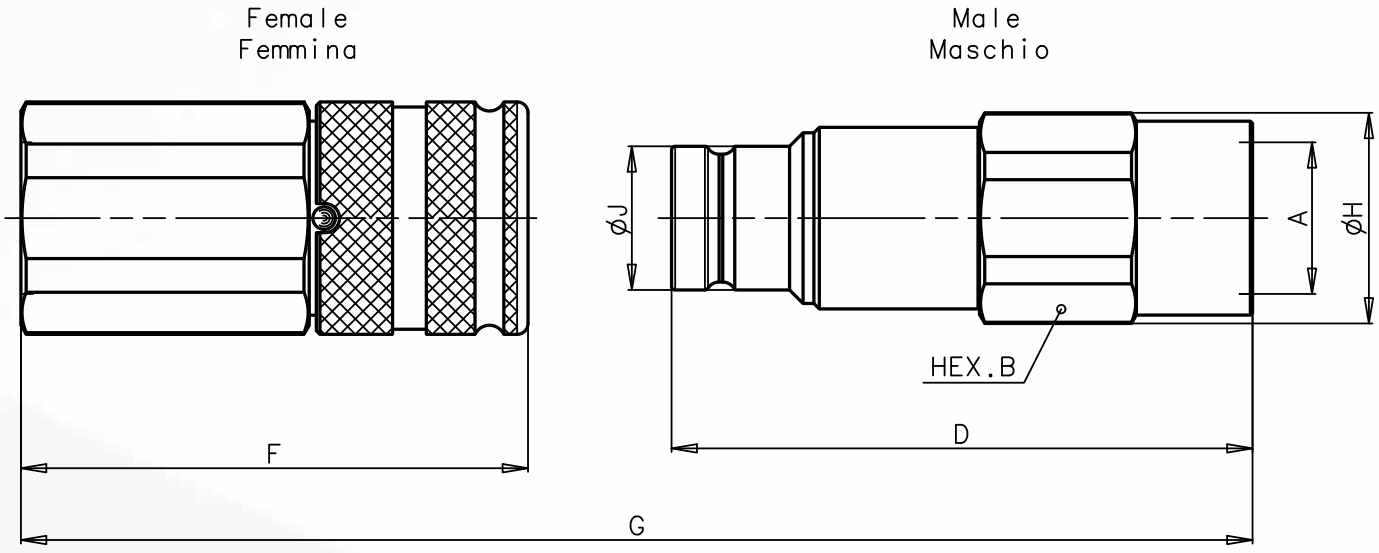
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

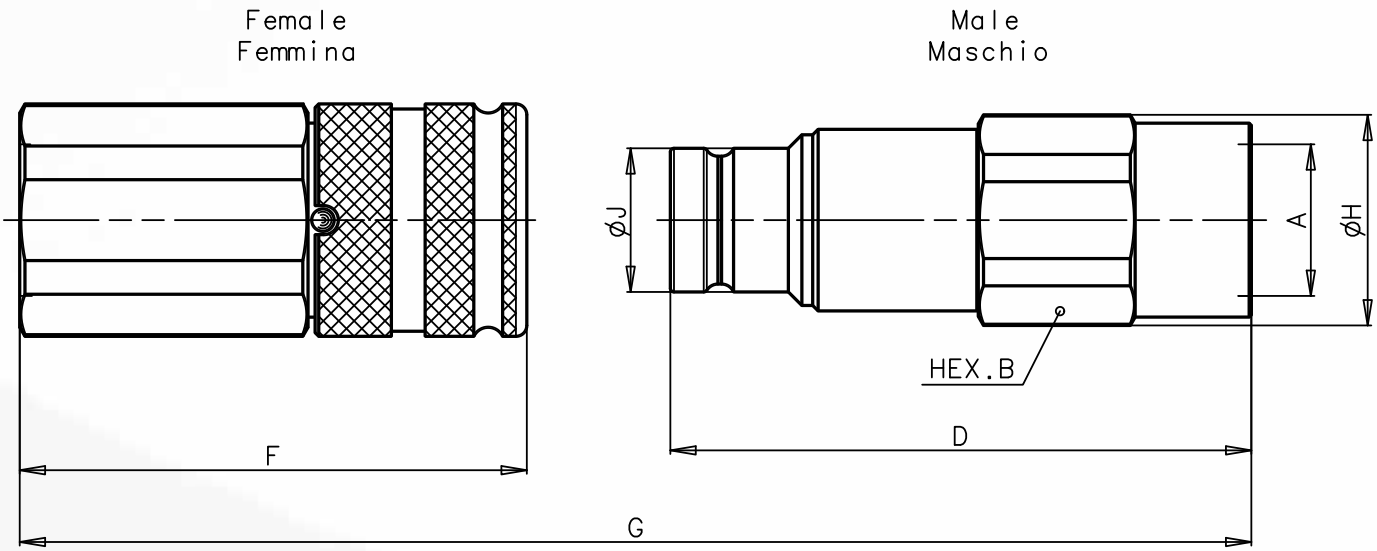
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
APM9	3/8	mm	27	-	80	-	-	(F+D)-16	29	-	19,7	Kg	0,197	-
3/8 BSP		Inch	1,06	-	3,15	-	-	(F+D)-0,630	1,14	-	0,78	lb	0,43	-
APM9	1/2	mm	27	-	82,5	-	-	(F+D)-16	29	-	19,7	Kg	0,195	-
1/2 BSP		Inch	1,06	-	3,25	-	-	(F+D)-0,630	1,14	-	0,78	lb	0,43	-
APM13	1/2	mm	36	-	91	-	-	(F+D)-17,3	38,5	-	24,5	Kg	0,408	-
1/2 BSP		Inch	1,42	-	3,58	-	-	(F+D)-0,681	1,52	-	0,96	lb	0,90	-
APM13	3/4	mm	36	-	93,5	-	-	(F+D)-17,3	38,5	-	24,5	Kg	0,404	-
3/4 BSP		Inch	1,42	-	3,68	-	-	(F+D)-0,681	1,52	-	0,96	lb	0,89	-
APM15	3/4	mm	36	-	95	-	-	(F+D)-17,6	38,5	-	27	Kg	0,426	-
3/4 BSP		Inch	1,42	-	3,74	-	-	(F+D)-0,693	1,52	-	1,06	lb	0,94	-
APM17	1	mm	46	-	108,5	-	-	(F+D)-22	49,8	-	30	Kg	0,750	-
1 BSP		Inch	1,81	-	4,27	-	-	(F+D)-0,866	1,96	-	1,18	lb	1,65	-
APM21	1-1/4	mm	55	-	123,5	-	-	(F+D)-23	59,8	-	36	Kg	1,160	-
1-1/4 BSP		Inch	2,17	-	4,86	-	-	(F+D)-0,906	2,35	-	1,42	lb	2,56	-
APM30	1-1/2	mm	70	-	146,9	-	-	(F+D)-28,6	75,8	-	57	Kg	2,580	-
1-1/2 BSP		Inch	2,76	-	5,78	-	-	(F+D)-1,126	2,98	-	2,24	lb	5,69	-

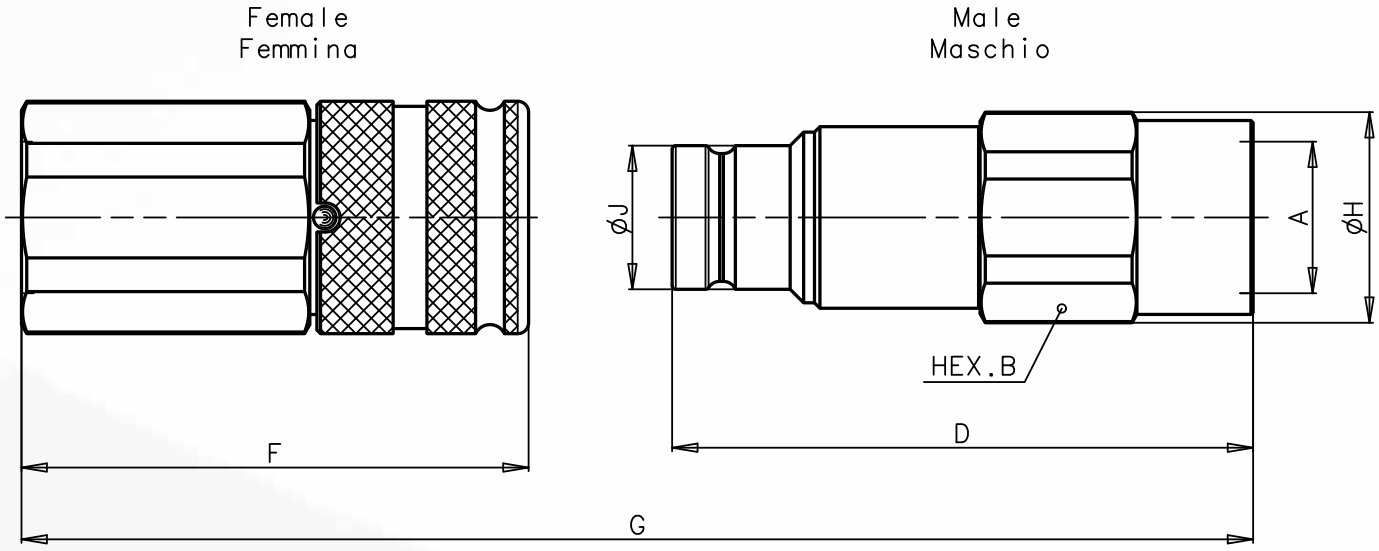
OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
APM9	3/8	mm	27	-	80	-	-	(F+D)-16	29	-	19,7	Kg	0,210	-
3/8 NPT		Inch	1,06	-	3,15	-	-	(F+D)-0,630	1,14	-	0,78	lb	0,46	-
APM9	1/2	mm	27	-	82,5	-	-	(F+D)-16	29	-	19,7	Kg	0,205	-
1/2 NPT		Inch	1,06	-	3,25	-	-	(F+D)-0,630	1,14	-	0,78	lb	0,45	-
APM13	1/2	mm	36	-	91	-	-	(F+D)-17,3	38,5	-	24,5	Kg	0,430	-
1/2 NPT		Inch	1,42	-	3,58	-	-	(F+D)-0,681	1,52	-	0,96	lb	0,95	-
APM13	3/4	mm	36	-	93,5	-	-	(F+D)-17,3	38,5	-	24,5	Kg	0,415	-
3/4 NPT		Inch	1,42	-	3,68	-	-	(F+D)-0,681	1,52	-	0,96	lb	0,91	-
APM15	3/4	mm	36	-	95	-	-	(F+D)-17,6	38,5	-	27	Kg	0,435	-
3/4 NPT		Inch	1,42	-	3,74	-	-	(F+D)-0,693	1,52	-	1,06	lb	0,96	-
APM17	1	mm	46	-	108,5	-	-	(F+D)-22	49,8	-	30	Kg	0,760	-
1 NPT		Inch	1,81	-	4,27	-	-	(F+D)-0,866	1,96	-	1,18	lb	1,68	-
APM21	1-1/4	mm	55	-	123,5	-	-	(F+D)-23	59,8	-	36	Kg	1,200	-
1-1/4 NPT		Inch	2,17	-	4,86	-	-	(F+D)-0,906	2,35	-	1,42	lb	2,65	-
APM30	1-1/2	mm	70	-	146,9	-	-	(F+D)-28,6	75,8	-	57	Kg	2,595	-
1-1/2 NPT		Inch	2,76	-	5,78	-	-	(F+D)-1,126	2,98	-	2,24	lb	5,72	-

OVERALL DIMENSIONS



FEMALE SAE THREAD (SAE J1926-1)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
APM9	3/4-	mm	27	-	82,5	-	-	(F+D)-16	29	-	19,7	Kg	0,205	-
1/2 SAE	16UNF	Inch	1,06	-	3,25	-	-	(F+D)-0,630	1,14	-	0,78	lb	0,45	-
APM13	7/8-	mm	36	-	91,0	-	-	(F+D)-17,3	38,5	-	24,5	Kg	0,413	-
5/8 SAE	14UNF	Inch	1,42	-	3,58	-	-	(F+D)-0,681	1,52	-	0,96	lb	0,91	-
APM13	1-1/16-	mm	36	-	93,5	-	-	(F+D)-17,3	38,5	-	24,5	Kg	0,400	-
3/4 SAE	12UN	Inch	1,42	-	3,68	-	-	(F+D)-0,681	1,52	-	0,96	lb	0,88	-
APM15	1-1/16-	mm	36	-	95,0	-	-	(F+D)-17,6	38,5	-	27	Kg	0,425	-
3/4 SAE	12UN	Inch	1,42	-	3,74	-	-	(F+D)-0,693	1,52	-	1,06	lb	0,94	-
APM17	1-5/16-	mm	46	-	108,5	-	-	(F+D)-22	49,8	-	30	Kg	0,755	-
1 SAE	12UN	Inch	1,81	-	4,27	-	-	(F+D)-0,866	1,96	-	1,18	lb	1,66	-
APM21	1-5/8-	mm	55	-	123,5	-	-	(F+D)-23	59,8	-	36	Kg	1,185	-
1-1/4 SAE	12UN	Inch	2,17	-	4,86	-	-	(F+D)-0,906	2,35	-	1,42	lb	2,61	-
APM30	1-7/8-	mm	70	-	146,9	-	-	(F+D)-28,6	75,8	-	57	Kg	2,580	-
1-1/2 SAE	12UN	Inch	2,76	-	5,78	-	-	(F+D)-1,126	2,98	-	2,24	lb	5,69	-




SERIES: **VP-P**

PATENTED

INTERCHANGE: Stucchi internal specification

MAIN APPLICATIONS

- Mobile construction equipment
- Hydraulic equipment
- Drilling rigs
- Vehicles

The "VP-P" screw flat face coupling series is the technological solution to demanding hydraulic applications.
The screw connection system eliminates premature wear and the "brinelling" caused by a mechanical locking ball system. This makes the "VP-P" series suitable for high operating and impulse pressures.
The triple valve system allows connection of the coupling safely even in presence of high internal residual pressure and at the same time avoiding fluid loss. The safety sleeve integrated in the connection system prevents accidental disconnection making the "VP-P" series ideal for the most extreme operating conditions where strong vibration and torsion issues are present.

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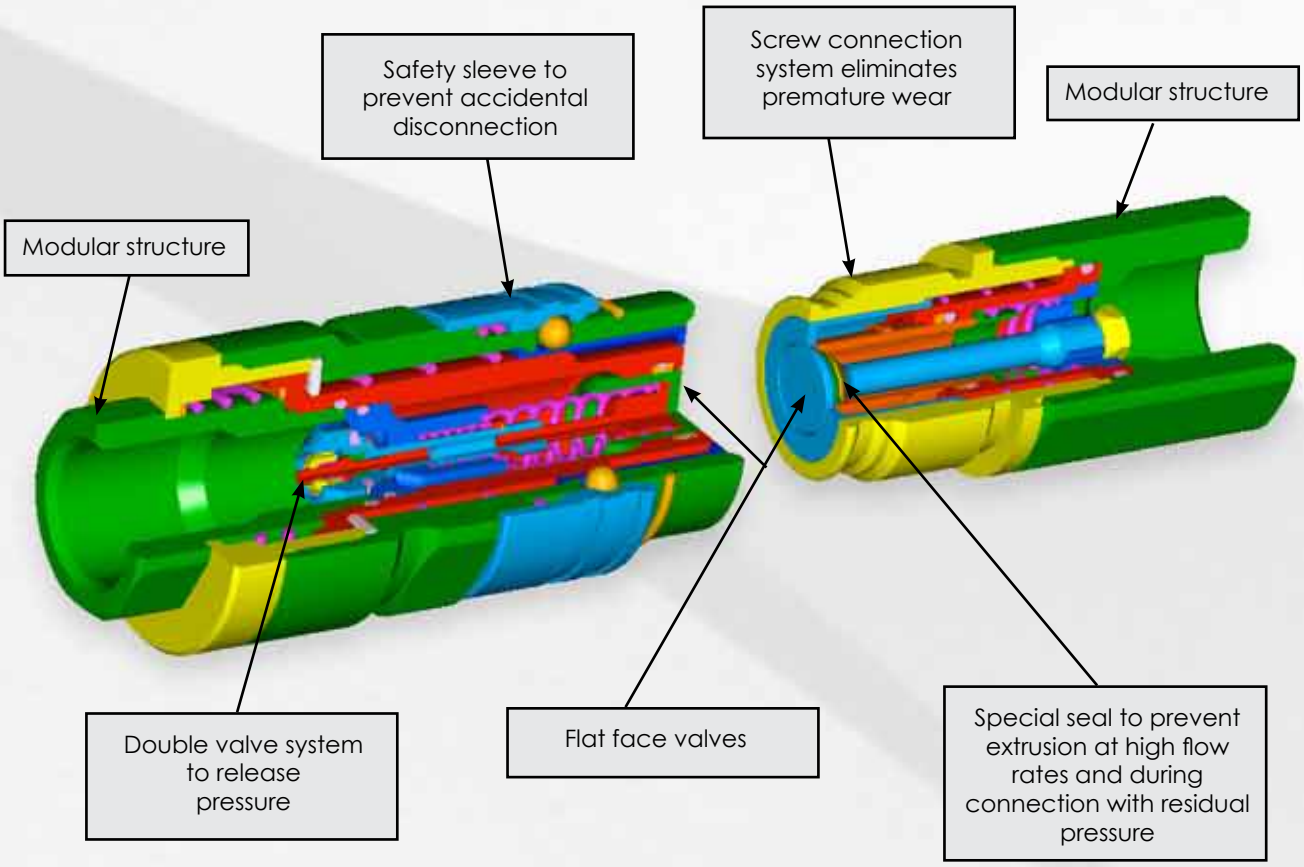
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: Stucchi internal specification
- Valve system: Flat face
- Mechanical connection: Screw system
- Connection system: Screw to connect
- Disconnection system: Unscrew to connect
- Connection with residual pressure: Allowed in the male coupling, female coupling or both.
- Disconnection with residual pressure: Allowed
- Threads available: BSP, NPT, SAE
- Threads on request: Metrics DIN, ORFS or others
- Construction material: High grade carbon steel. Threaded zone treatment: nitriding + oxidation (QPQ)
- Other Surface treatment: Zinc plated
- External springs: AISI 302
- Internal springs: C72 steel
- Balls: Hard steel 100 C6
- Seals: standard in NBR (Nitrile), PUR (Polyurethane), POM (Delrin)
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination in the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Internal flow of valve design creates minimal pressure drop, maintaining circuit efficiency in the system.
- Internal pressure release valve system allows an easy connection with high internal residual pressure.
- The safety sleeve integrated in the connection system prevents the accidental disconnection.
- The modular design allows for broad range of port configurations.
- Good resistance at impulse pressures.
- Safe and simple to use.

HOW TO USE

- Before connecting clean the flat mating surface of coupling to avoid inclusion of contamination in the circuit.
- To couple align the female coupling to the male coupling, push the male and twist in one motion to catch the first thread on the female half and continue to thread together.
  The screwing of the threads should be done by hand without the use of the tools for the first part of the connection.
  The use of tools for the second part of connection can be necessary if there is high residual pressure in the circuit.
  Thread the mating halves until the sleeve lock clicks into position. This activates the safety lock and eliminates accidental disconnection of the coupling.
- To uncouple pull the locking sleeve towards the male coupling and unthread the connection.
  The tighten is disengaged after one complete rotation of the coupler, continue to unthread until both halves disconnect.
  If safety lock sleeve will not pull back rotate the male coupling to couple direction until the sleeve will pull back.

WARNING!

- Do not use the female coupling disconnected with impulse pressure at high frequency.
- Do not couple-uncouple with flow in the circuit. Connection only allowed with residual pressure.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- Do not disconnect the coupling without pulling back the safety sleeve.
- When the couplings are disconnected, it is suggested to use the protection caps.
- It is important to limit contamination in the circuit to avoid compromising the function of the internal valves.

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect ° torque		Disconnect ° torque		Spillage *
	Inch	mm	l/min	GPM	l/min	GPM	Nm	lbf ft	Nm	lbf ft	ml
VP7	1/4	-	12	3,18	24	6,36	0,6	0,44	0,4	0,29	0,012
VP9P	3/8	-	23	6,10	46	12,19	0,8	0,59	0,5	0,37	0,040
VP13P	1/2	-	45	11,93	90	23,85	1,1	0,81	1,0	0,74	0,025
VP15P	5/8	-	74	19,61	148	39,22	1,1	0,81	1,0	0,74	0,033
VP17P	3/4	-	100	26,50	200	53,00	2,0	1,47	1,4	1,03	0,018
VP21P	1	-	189	50,09	378	100,17	2,2	1,62	1,8	1,33	0,060
VP30P	1-1/2	-	288	76,32	750	198,75	6,5	4,79	3,2	2,36	0,200

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
VP7	60	8700	60	8700	42	6090	150	21750	150	21750	126	18270
VP9P	55	7975	55	7975	33	4785	140	20300	140	20300	100	14500
VP13P	55	7975	55	7975	33	4785	140	20300	140	20300	100	14500
VP15P	55	7975	55	7975	33	4785	140	20300	140	20300	100	14500
VP17P	50	7250	50	7250	33	4785	125	18125	125	18125	100	14500
VP21P	47	6815	47	6815	30	4350	120	17400	120	17400	80	11600
VP30P	40	5800	40	5800	27	3915	110	15950	110	15950	80	11600

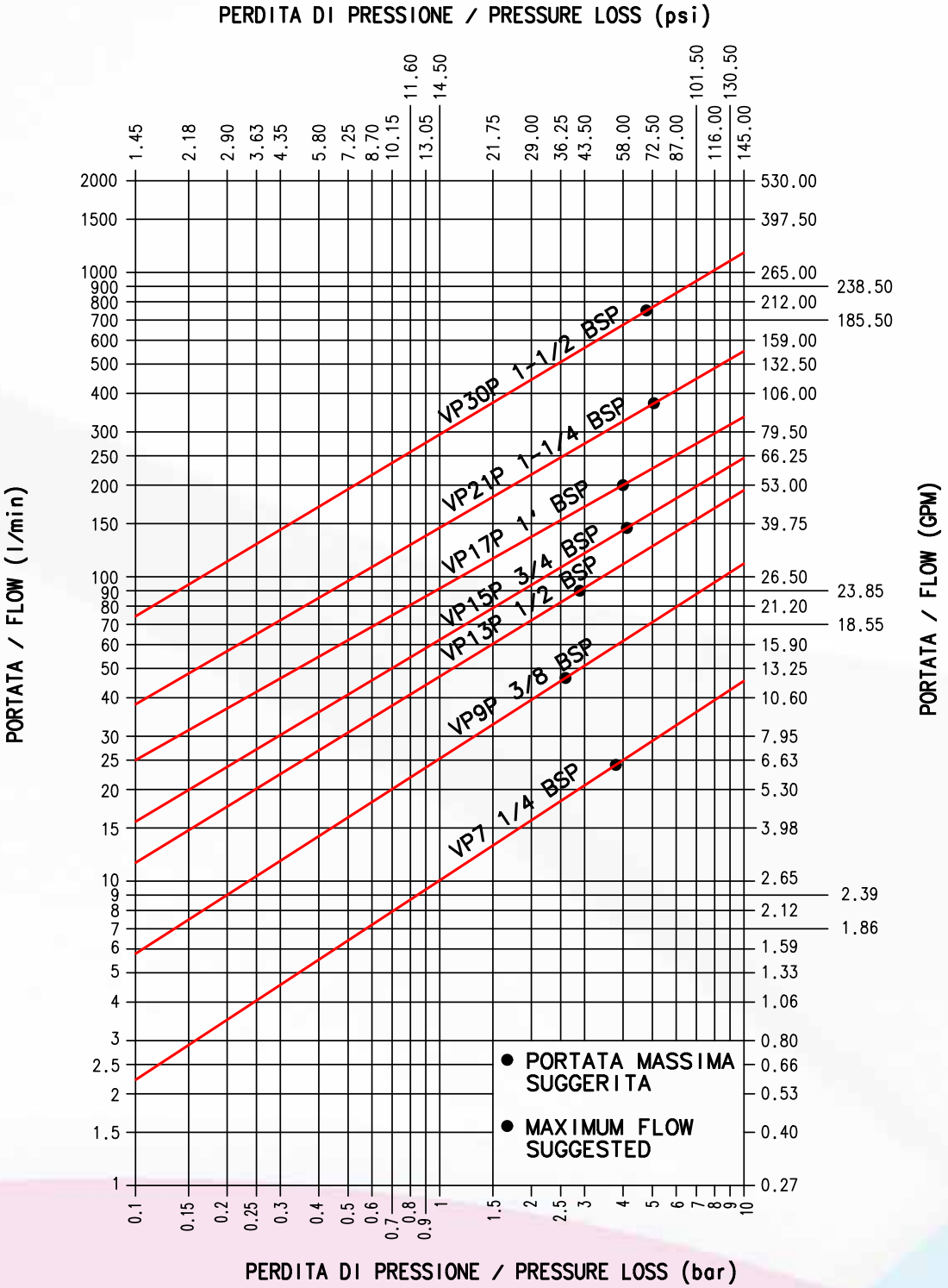
Description	Max. residual pressure during connection						Max. residual pressure during disconnect	
	Male Female to drain		Female Male to drain		Male and Female			
	MPa	psi	MPa	psi	MPa	psi	MPa	psi
VP7	30	4350	30	4350	25	3625	25	3625
VP9P	25	3625	25	3625	25	3625	25	3625
VP13P	25	3625	25	3625	20	2900	20	2900
VP15P	25	3625	25	3625	20	2900	20	2900
VP17P	25	3625	25	3625	15	2175	15	2175
VP21P	25	3625	25	3625	15	2175	15	2175
VP30P	25	3625	25	3625	5	725	5	725

° Connect torque and disconnect torque without residual pressure. The torque increase to increasing of internal residual pressure.
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle without residual pressure.
- Temperature range: Standard seals NBR, PUR, POM from -20 °C to +100 °C (from -4 °F to +212 °F).
- Note: VP7 has metal to metal sealing system in the internal valve of male and in the valve of female coupling.
- Tests:

- The couplings have been tested at max. operating pressure for 100'000 impulses in according with ISO 7241-2.

PRESSURE DROP

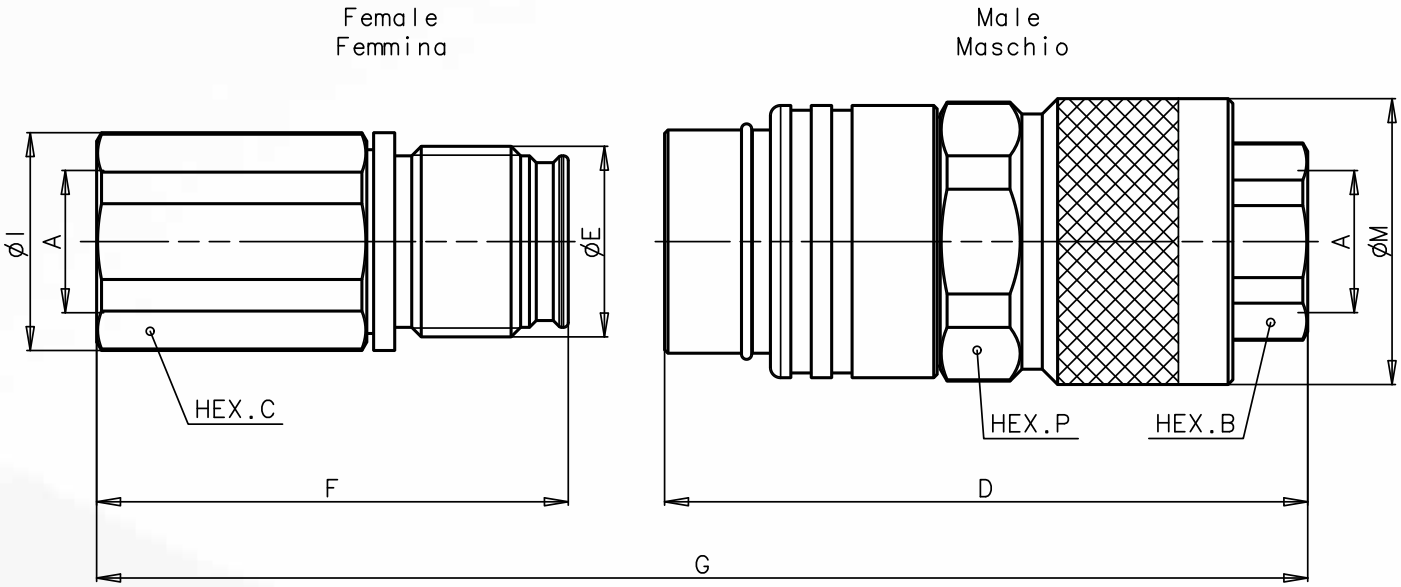
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

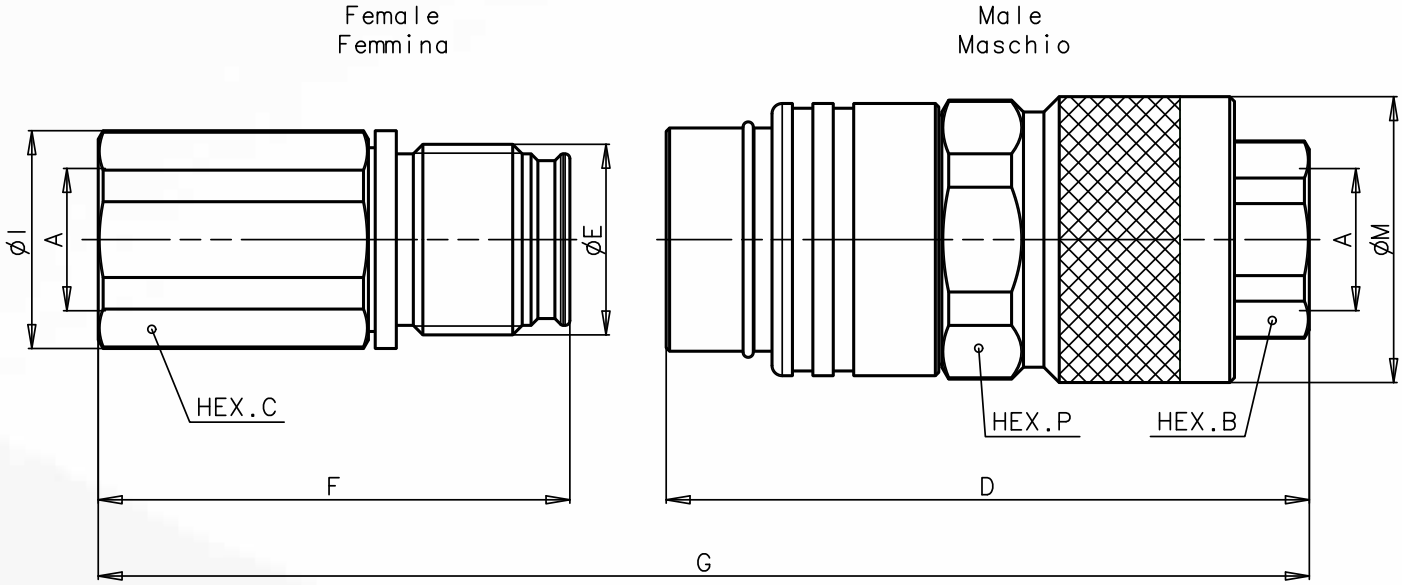
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	I	M	P	Unit	Weight	
													Male	Female
VP7	1/4	mm	22	27	83,9	M24x2	52,8	125,2	29	35	32	Kg	0,393	0,160
1/4 BSP		Inch	0,87	1,06	3,30	-	2,08	4,93	1,14	1,38	1,26	lb	0,87	0,35
VP9P	3/8	mm	27	30	94,5	M28x2	64,3	142,3	32	42	38	Kg	0,595	0,240
3/8 BSP		Inch	1,06	1,18	3,72	-	2,53	5,60	1,26	1,65	1,50	lb	1,31	0,53
VP9P	1/2	mm	27	30	94,5	M28x2	69,3	147,3	32	42	38	Kg	0,575	0,245
1/2 BSP		Inch	1,06	1,18	3,72	-	2,73	5,80	1,26	1,65	1,50	lb	1,27	0,54
VP13P	1/2	mm	36	36	110	M36x3	76,2	167,9	40	49	45	Kg	0,980	0,420
1/2 BSP		Inch	1,42	1,42	4,33	-	3,00	6,61	1,57	1,93	1,77	lb	2,16	0,93
VP13P	3/4	mm	36	36	110	M36x3	83,2	174,9	40	49	45	Kg	0,945	0,440
3/4 BSP		Inch	1,42	1,42	4,33	-	3,28	6,89	1,57	1,93	1,77	lb	2,08	0,97
VP15P	3/4	mm	36	41	110	M39x3	83,4	174,9	44,8	52	48	Kg	1,055	0,580
3/4 BSP		Inch	1,42	1,61	4,33	-	3,28	6,89	1,76	2,05	1,89	lb	2,33	1,28
VP17P	3/4	mm	46	46	127,1	M45x3	96	200,5	49,8	60	55	Kg	1,635	0,955
3/4 BSP		Inch	1,81	1,81	5,00	-	3,78	7,89	1,96	2,36	2,17	lb	3,60	2,11
VP17P	1	mm	46	46	127,1	M45x3	98	202,5	49,8	60	55	Kg	1,585	0,905
1 BSP		Inch	1,81	1,81	5,00	-	3,86	7,97	1,96	2,36	2,17	lb	3,49	2,00
VP21P	1	mm	55	55	137	M55x3	104	213,8	59,8	76	70	Kg	2,610	1,495
1 BSP		Inch	2,17	2,17	5,39	-	4,09	8,42	2,35	2,99	2,76	lb	5,75	3,30
VP21P	1-1/4	mm	55	55	137	M55x3	105	214,8	59,8	76	70	Kg	2,510	1,395
1-1/4 BSP		Inch	2,17	2,17	5,39	-	4,13	8,46	2,35	2,99	2,76	lb	5,53	3,08
VP30P	1-1/4	mm	65	65	174,7	M72x4	132,2	271,3	85	94	85	Kg	5,220	3,030
1-1/4 BSP		Inch	2,56	2,56	6,88	-	5,20	10,68	3,35	3,70	3,35	lb	11,51	6,68
VP30P	1-1/2	mm	65	65	174,7	M72x4	132,2	271,3	85	94	85	Kg	5,120	2,930
1-1/2 BSP		Inch	2,56	2,56	6,88	-	5,20	10,68	3,35	3,70	3,35	lb	11,29	6,46

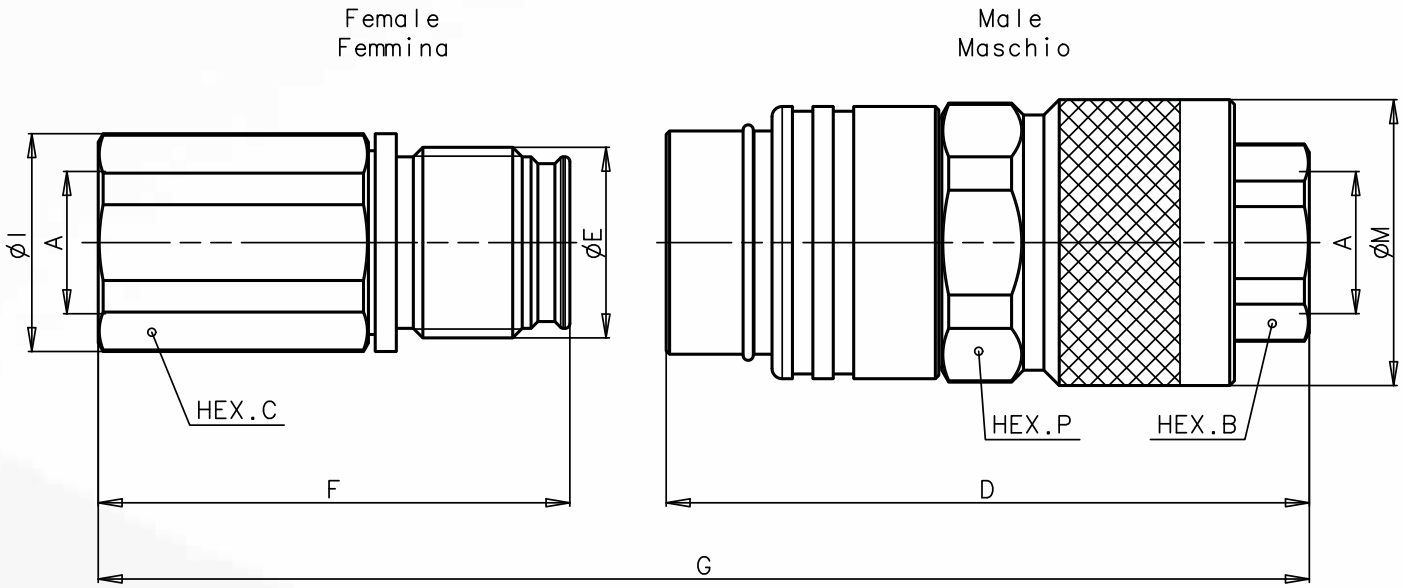
OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	I	M	P	Unit	Weight	
													Male	Female
VP7	1/4	mm	22	27	85,3	M24x2	52,8	126,6	29	35	32	Kg	0,395	0,165
1/4 NPT		Inch	0,87	1,06	3,36	-	2,08	4,98	1,14	1,38	1,26	lb	0,87	0,36
VP9P	3/8	mm	27	30	94,5	M28x2	64,3	142,3	32	42	38	Kg	0,595	0,240
3/8 NPT		Inch	1,06	1,18	3,72	-	2,53	5,60	1,26	1,65	1,50	lb	1,31	0,53
VP9P	1/2	mm	27	30	94,5	M28x2	69,3	147,3	32	42	38	Kg	0,575	0,245
1/2 NPT		Inch	1,06	1,18	3,72	-	2,73	5,80	1,26	1,65	1,50	lb	1,27	0,54
VP13P	1/2	mm	36	36	110	M36x3	76,2	167,9	40	49	45	Kg	0,980	0,425
1/2 NPT		Inch	1,42	1,42	4,33	-	3,00	6,61	1,57	1,93	1,77	lb	2,16	0,94
VP13P	3/4	mm	36	36	110	M36x3	83,2	174,9	40	49	45	Kg	0,945	0,440
3/4 NPT		Inch	1,42	1,42	4,33	-	3,28	6,89	1,57	1,93	1,77	lb	2,08	0,97
VP15P	3/4	mm	36	41	110	M39x3	83,4	174,9	44,8	52	48	Kg	1,065	0,595
3/4 NPT		Inch	1,42	1,61	4,33	-	3,28	6,89	1,76	2,05	1,89	lb	2,35	1,31
VP17P	3/4	mm	46	46	127,1	M45x3	95	199,5	49,8	60	55	Kg	1,635	0,955
3/4 NPT		Inch	1,81	1,81	5,00	-	3,74	7,85	1,96	2,36	2,17	lb	3,60	2,11
VP17P	1	mm	46	46	127,1	M45x3	98	202,5	49,8	60	55	Kg	1,600	0,915
1 NPT		Inch	1,81	1,81	5,00	-	3,86	7,97	1,96	2,36	2,17	lb	3,53	2,02
VP21P	1	mm	55	55	137	M55x3	104	213,8	59,8	76	70	Kg	2,610	1,495
1 NPT		Inch	2,17	2,17	5,39	-	4,09	8,42	2,35	2,99	2,76	lb	5,75	3,30
VP21P	1-1/4	mm	55	55	137	M55x3	108,3	218,1	59,8	76	70	Kg	2,530	1,430
1-1/4 NPT		Inch	2,17	2,17	5,39	-	4,26	8,59	2,35	2,99	2,76	lb	5,58	3,15
VP30P	1-1/4	mm	65	65	174,7	M72x4	132,2	271,3	85	94	85	Kg	5,220	3,030
1-1/4 NPT		Inch	2,56	2,56	6,88	-	5,20	10,68	3,35	3,70	3,35	lb	11,51	6,68
VP30P	1-1/2	mm	65	65	174,7	M72x4	132,2	271,3	85	94	85	Kg	5,100	2,930
1-1/2 NPT		Inch	2,56	2,56	6,88	-	5,20	10,68	3,35	3,70	3,35	lb	11,24	6,46

OVERALL DIMENSIONS



FEMALE SAE THREAD (SAE J1926-1)

Description	A	Unit	B	C	D	E	F	G	I	M	P	Unit	Weight	
													Male	Female
VP9P	9/16-	mm	27	30	94,5	M28x2	64,3	142,3	32	42	38	Kg	0,600	0,245
3/8 SAE	18UNF	Inch	1,06	1,18	3,72	-	2,53	5,60	1,26	1,65	1,50	lb	1,32	0,54
VP9P	3/4-	mm	27	30	94,5	M28x2	69,3	147,3	32	42	38	Kg	0,585	0,250
1/2 SAE	16UNF	Inch	1,06	1,18	3,72	-	2,73	5,80	1,26	1,65	1,50	lb	1,29	0,55
VP9P	7/8-	mm	30	30	104,5	M28x2	71,3	159,3	32	42	38	Kg	0,615	0,245
5/8 SAE	14UNF	Inch	1,18	1,18	4,11	-	2,81	6,27	1,26	1,65	1,50	lb	1,36	0,54
VP13P	7/8-	mm	36	36	110	M36x3	78,2	169,9	40	49	45	Kg	0,980	0,420
5/8 SAE	14UNF	Inch	1,42	1,42	4,33	-	3,08	6,69	1,57	1,93	1,77	lb	2,16	0,93
VP13P	1-1/16-	mm	36	36	110	M36x3	83,2	174,9	40	49	45	Kg	0,930	0,430
3/4 SAE	12UN	Inch	1,42	1,42	4,33	-	3,28	6,89	1,57	1,93	1,77	lb	2,05	0,95
VP15P	1-1/16-	mm	36	41	110	M39x3	83,4	174,9	44,8	52	48	Kg	1,045	0,575
3/4 SAE	12UN	Inch	1,42	1,61	4,33	-	3,28	6,89	1,76	2,05	1,89	lb	2,30	1,27
VP17P	1-1/16-	mm	46	46	129,1	M45x3	98	204,5	49,8	60	55	Kg	1,635	0,955
3/4 SAE	12UN	Inch	1,81	1,81	5,08	-	3,86	8,05	1,96	2,36	2,17	lb	3,60	2,11
VP17P	1-5/16-	mm	46	46	127,1	M45x3	98	202,5	49,8	60	55	Kg	1,580	0,895
1 SAE	12UN	Inch	1,81	1,81	5,00	-	3,86	7,97	1,96	2,36	2,17	lb	3,48	1,97
VP21P	1-5/16-	mm	55	55	137	M55x3	104	213,8	59,8	76	70	Kg	2,610	1,495
1 SAE	12UN	Inch	2,17	2,17	5,39	-	4,09	8,42	2,35	2,99	2,76	lb	5,75	3,30
VP21P	1-5/8-	mm	55	55	137	M55x3	105	214,8	59,8	76	70	Kg	2,500	1,400
1-1/4 SAE	12UN	Inch	2,17	2,17	5,39	-	4,13	8,46	2,35	2,99	2,76	lb	5,51	3,09
VP30P	1-5/8-	mm	65	65	174,7	M72x4	132,2	271,3	85	94	85	Kg	5,220	3,030
1-1/4 SAE	12UN	Inch	2,56	2,56	6,88	-	5,20	10,68	3,35	3,70	3,35	lb	11,51	6,68
VP30P	1-7/8-	mm	65	65	174,7	M72x4	132,2	271,3	85	94	85	Kg	5,120	2,920
1-1/2 SAE	12UN	Inch	2,56	2,56	6,88	-	5,20	10,68	3,35	3,70	3,35	lb	11,29	6,44

SERIES: **VEP-P**

PATENTED

INTERCHANGE: Stucchi internal specification

MAIN APPLICATIONS

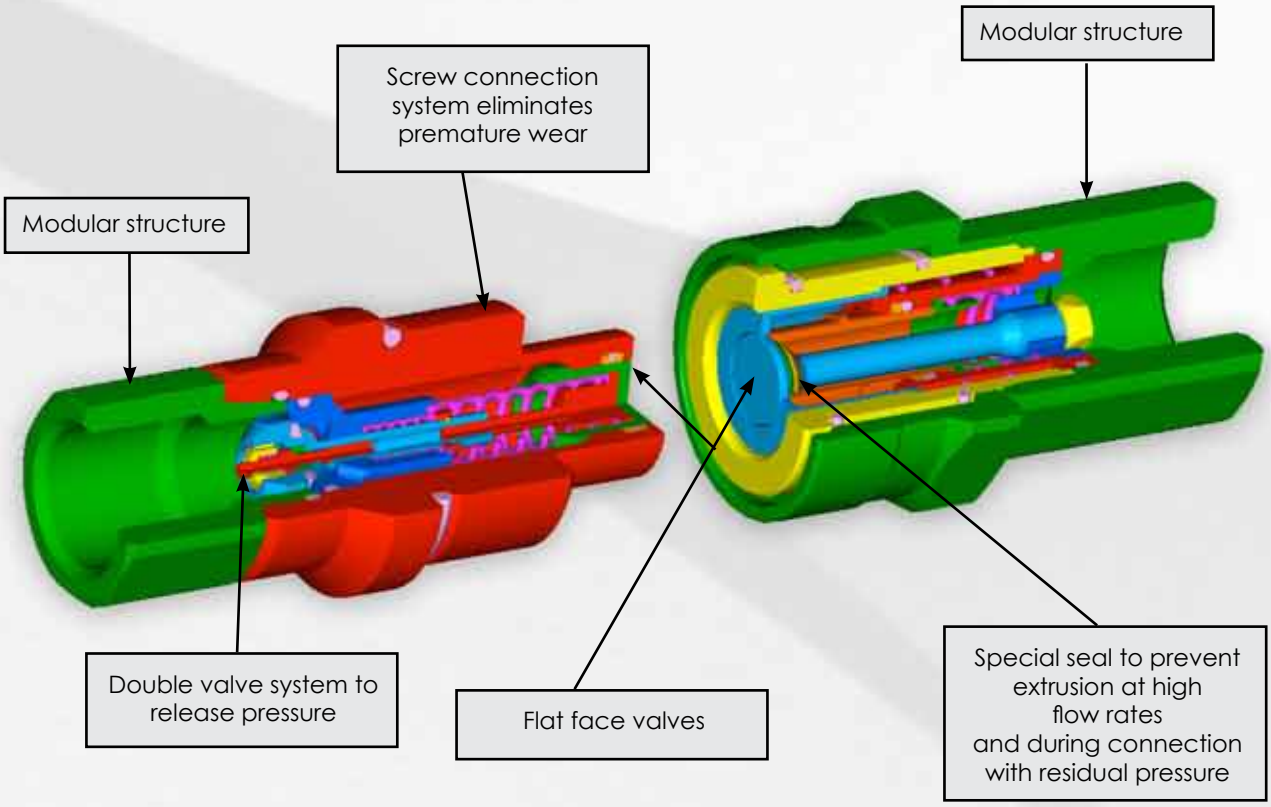
- Drilling rigs
- Mobile construction equipment
- Hydraulic equipment
- Vehicles

The "VEP-P" screw flat face coupling series is the Stucchi solution for hydraulic applications requiring high operating pressures and connection with residual pressure trapped in the circuit. The screw connection system eliminates the premature wear or "brinnelling" typically associated with locking ball connection systems when used in high impulse circuits. The triple valve system allows connection of the coupling safely even in the presence of high internal residual pressure and at the same time eliminates fluid loss during the connection-disconnection process.

Stucchi®
A CONSTANT FLOW OF SOLUTIONS

TECHNICAL FEATURES AND OPTIONS

- Interchangeability: Stucchi internal specification
- Valve system: Flat face
- Mechanical connection: Screw system
- Connection system: Screw to connect
- Disconnection system: Unscrew to disconnect
- Connection with residual pressure: Pressure in the male coupling, female coupling or both.
- Disconnection with residual pressure: Allowed
- Threads available: BSP, NPT, SAE
- Threads on request: Metrics DIN, ORFS or others
- Construction material: High grade carbon steel. Threaded zone treatment: nitriding + oxidation (QPQ)
- Other surface treatment: Zinc plated
- External springs: AISI 302
- Internal springs: C72 steel
- Seals: standard in NBR (Nitrile), PUR (Polyurethane), POM (Delrin)
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination in the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Internal flow of valve design creates minimal pressure drop, maintaining circuit efficiency in the system.
- Internal pressure release valve system allows an easy connection with high internal residual pressure.
- The modular design allows for broad range of port configurations.
- High resistance with impulse pressures.
- Safe and simple to use.

HOW TO USE

- Before connecting clean the flat mating surface of coupling to avoid inclusion of contamination in the circuit.
- To couple pull forward the connection sleeve of the female coupling. Align the female and male coupling holding forward the connection sleeve and thread together turning the sleeve.
  Keep couplers aligned during connection process. Do not push to connect couplings.
  The screwing of the threads should be done by hand without the use of the tools for the first part of the connection.
  The use of tools for the second part of connection can be necessary if there is high residual pressure in the circuit.
  Screw the connecting sleeve of the female until metal surface contact with the male coupling is complete.
  Tighten the sleeve to the base of the male using the tightening torque spec. as indicated in the table below.
- To uncouple turn sleeve from contact position using a wrench, then unscrew making sure the couplings stay aligned through the entire process.

WARNING!

- Do not use the female coupling disconnected with impulse pressure at high frequency.
- Do not couple-uncouple with flow in the circuit. Connection only allowed with residual pressure.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps.
- It is important to limit contamination in the circuit to avoid compromising the function of the internal valves.

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect ° torque		Disconnect ° torque		Spillage *
	Inch	mm	l/min	GPM	l/min	GPM	Nm	lbf ft	Nm	lbf ft	ml
VEP7	1/4	-	12	3,18	24	6,36	2,8	2,06	1,9	1,40	0,012
VEP9P	3/8	-	23	6,10	46	12,19	2,2	1,62	1,4	1,03	0,040
VEP13P	1/2	-	45	11,93	90	23,85	1,8	1,33	1,4	1,03	0,025
VEP15P	5/8	-	74	19,61	148	39,22	3,0	2,21	1,8	1,33	0,033
VEP17P	3/4	-	100	26,50	200	53,00	5,6	4,13	3,6	2,65	0,018
VEP21P	1	-	189	50,09	378	100,17	8,2	6,04	5,8	4,27	0,060
VEP30P	1-1/2	-	288	76,32	750	198,75	26,0	19,16	12,5	9,21	0,200
VEP45P	2	-	379	100,44	1000	265,00	40,0	29,48	40,0	29,48	0,350

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
VEP7	60	8700	60	8700	42	6090	150	21750	150	21750	126	18270
VEP9P	55	7975	55	7975	33	4785	140	20300	140	20300	100	14500
VEP13P	55	7975	55	7975	33	4785	140	20300	140	20300	100	14500
VEP15P	55	7975	55	7975	33	4785	140	20300	140	20300	100	14500
VEP17P	50	7250	50	7250	33	4785	125	18125	125	18125	100	14500
VEP21P	47	6815	47	6815	30	4350	120	17400	120	17400	80	11600
VEP30P	40	5800	40	5800	27	3915	110	15950	110	15950	80	11600
VEP45P	35	5075	35	5075	27	3915	110	15950	110	15950	80	11600

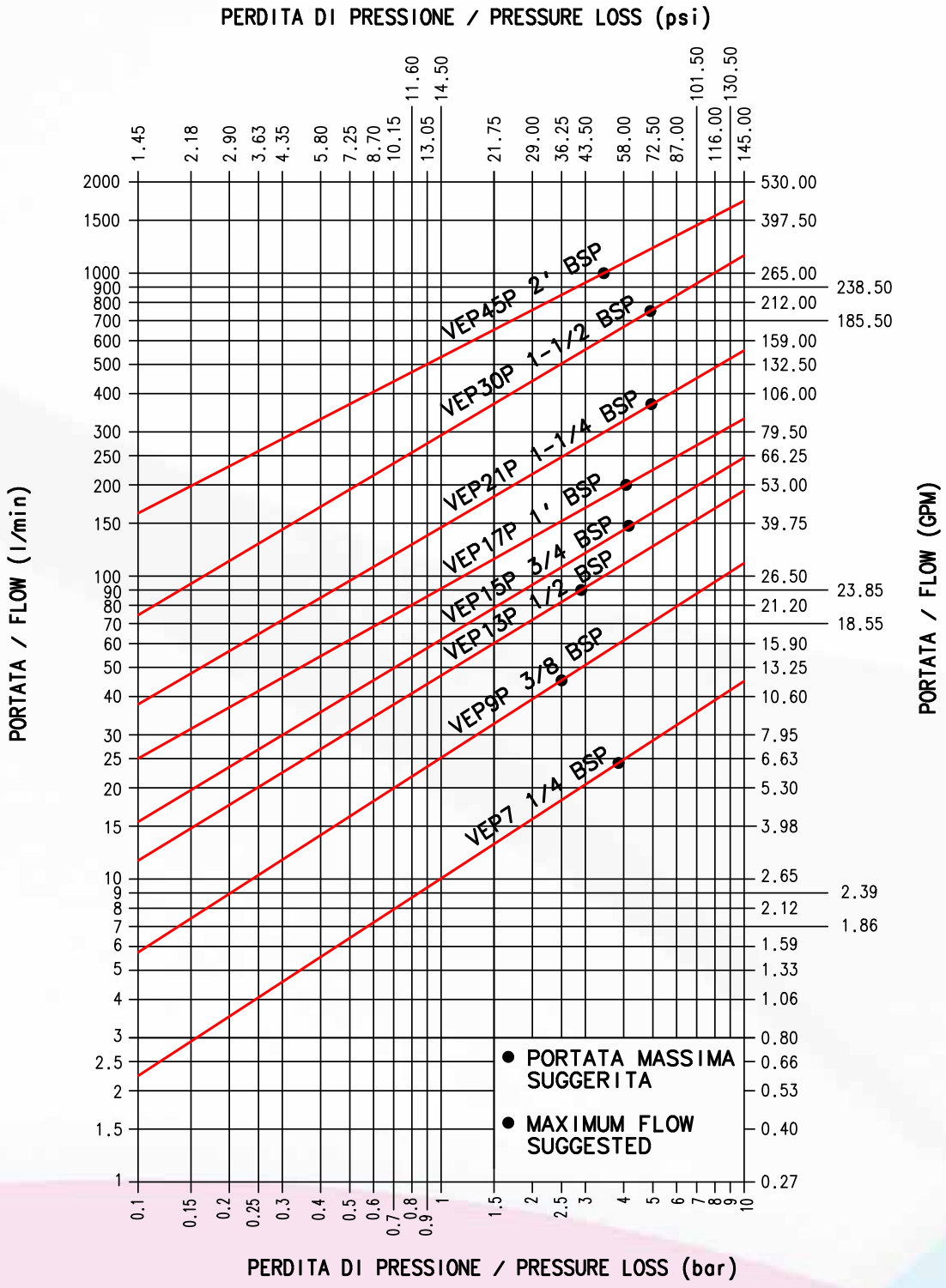
Description	Tightening torque		Max. residual pressure during connection						Max. residual pressure during disconnection	
			Male Female to drain		Female Male to drain		Male and Female			
	Nm	lbf ft	Mpa	psi	MPa	psi	MPa	psi	MPa	psi
VEP7	40-50	29-37	30	4350	30	4350	25	3625	25	3625
VEP9P	50 -60	37-44	25	3625	25	3625	25	3625	25	3625
VEP13P	65-75	48-55	25	3625	25	3625	20	2900	20	2900
VEP15P	70-80	52-59	25	3625	25	3625	20	2900	20	2900
VEP17P	90-110	66-81	25	3625	25	3625	15	2175	15	2175
VEP21P	125-145	92-107	25	3625	25	3625	15	2175	15	2175
VEP30P	155-175	114-129	25	3625	25	3625	5	725	5	725
VEP45P	320-350	236-258	25	3625	20	2900	2	290	2	290

° Connect torque and disconnect torque without residual pressure. The torque increase to increasing of internal residual pressure.
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle without residual pressure.
- Temperature range: Standard seals NBR, PUR, POM from -20 °C to +100 °C (from -4 °F to +212 °F).
- Note: VEP7 has metal to metal sealing system in the internal valve of male and in the valve of female coupling.
- Tests:

- The couplings have been tested at max. operating pressure for 100'000 impulses in according with ISO 7241-2. The VEP45P coupled and male have been tested for 1'000'000 impulses.

PRESSURE DROP

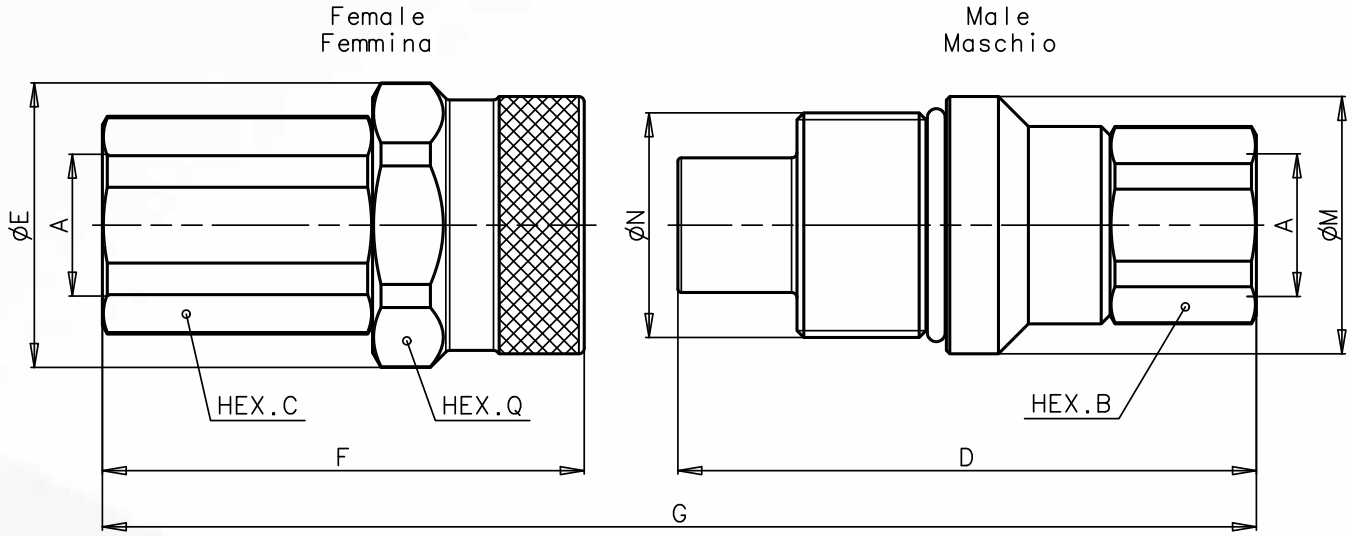
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

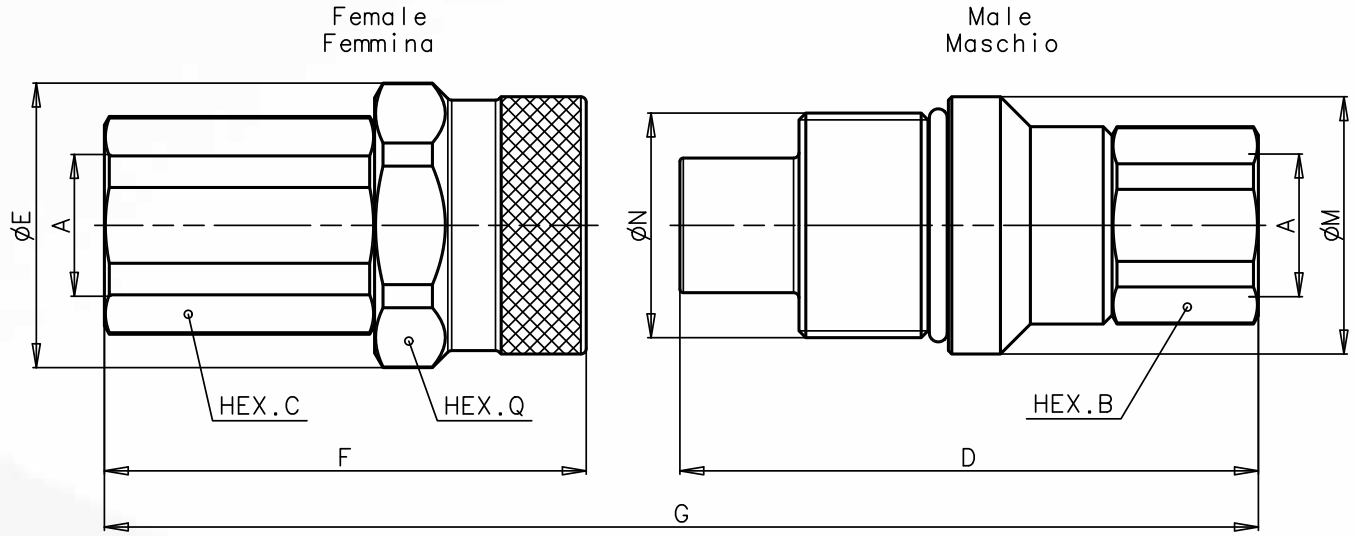
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	M	N	Q	Unit	Weight	
													Male	Female
VEP7	1/4	mm	22	27	71	38,8	54,1	113,3	34,8	M30x2	36	Kg	0,233	0,250
1/4 BSP		Inch	0,87	1,06	2,80	1,53	2,13	4,46	1,37	-	1,42	lb	0,51	0,55
VEP9P	3/8	mm	27	30	82,5	41,8	65,8	131,3	37,8	M33x2	38	Kg	0,325	0,330
3/8 BSP		Inch	1,06	1,18	3,25	1,65	2,59	5,17	1,49	-	1,50	lb	0,72	0,73
VEP9P	1/2	mm	27	30	85	41,8	70,8	138,8	37,8	M33x2	38	Kg	0,320	0,340
1/2 BSP		Inch	1,06	1,18	3,35	1,65	2,79	5,46	1,49	-	1,50	lb	0,71	0,75
VEP13P	1/2	mm	36	36	95	49,8	77,8	154,6	45,8	M40x3	46	Kg	0,600	0,615
1/2 BSP		Inch	1,42	1,42	3,74	1,96	3,06	6,09	1,80	-	1,81	lb	1,32	1,36
VEP13P	3/4	mm	36	36	97,4	49,8	84,8	164	45,8	M40x3	46	Kg	0,580	0,590
3/4 BSP		Inch	1,42	1,42	3,83	1,96	3,34	6,46	1,80	-	1,81	lb	1,28	1,30
VEP15P	3/4	mm	36	41	99	53,8	84,9	165,4	49,8	M45x3	50	Kg	0,670	0,760
3/4 BSP		Inch	1,42	1,61	3,90	2,12	3,34	6,51	1,96	-	1,97	lb	1,48	1,68
VEP17P	3/4	mm	46	46	113,6	58,8	97,7	188,5	54,8	M50x3	55	Kg	1,065	1,168
3/4 BSP		Inch	1,81	1,81	4,47	2,31	3,85	7,42	2,16	-	2,17	lb	2,35	2,57
VEP17P	1	mm	46	46	113,6	58,8	99,7	190,5	54,8	M50x3	55	Kg	1,015	1,118
1 BSP		Inch	1,81	1,81	4,47	2,31	3,93	7,50	2,16	-	2,17	lb	2,24	2,46
VEP21P	1	mm	55	55	123,4	69,8	105,8	205,2	64,5	M58x3	65	Kg	1,540	1,780
1 BSP		Inch	2,17	2,17	4,86	2,75	4,17	8,08	2,54	-	2,56	lb	3,40	3,92
VEP21P	1-1/4	mm	55	55	123,4	69,8	106,8	206,2	64,5	M58x3	65	Kg	1,440	1,685
1-1/4 BSP		Inch	2,17	2,17	4,86	2,75	4,20	8,12	2,54	-	2,56	lb	3,17	3,71
VEP30P	1-1/4	mm	65	65	150	92	133,5	253,9	89,8	M80x4	85	Kg	3,245	3,910
1-1/4 BSP		Inch	2,56	2,56	5,91	3,62	5,26	10,00	3,54	-	3,35	lb	7,15	8,62
VEP30P	1-1/2	mm	65	65	150	92	133,5	253,9	89,8	M80x4	85	Kg	3,200	3,810
1-1/2 BSP		Inch	2,56	2,56	5,91	3,62	5,26	10,00	3,54	-	3,35	lb	7,05	8,40
VEP45P	2	mm	90	90	218,4	200	224,8	383,5	145	M130x6	-	Kg	11,885	14,680
2 BSP		Inch	3,54	3,54	8,60	7,87	8,85	15,10	5,71	-	-	lb	26,20	32,36

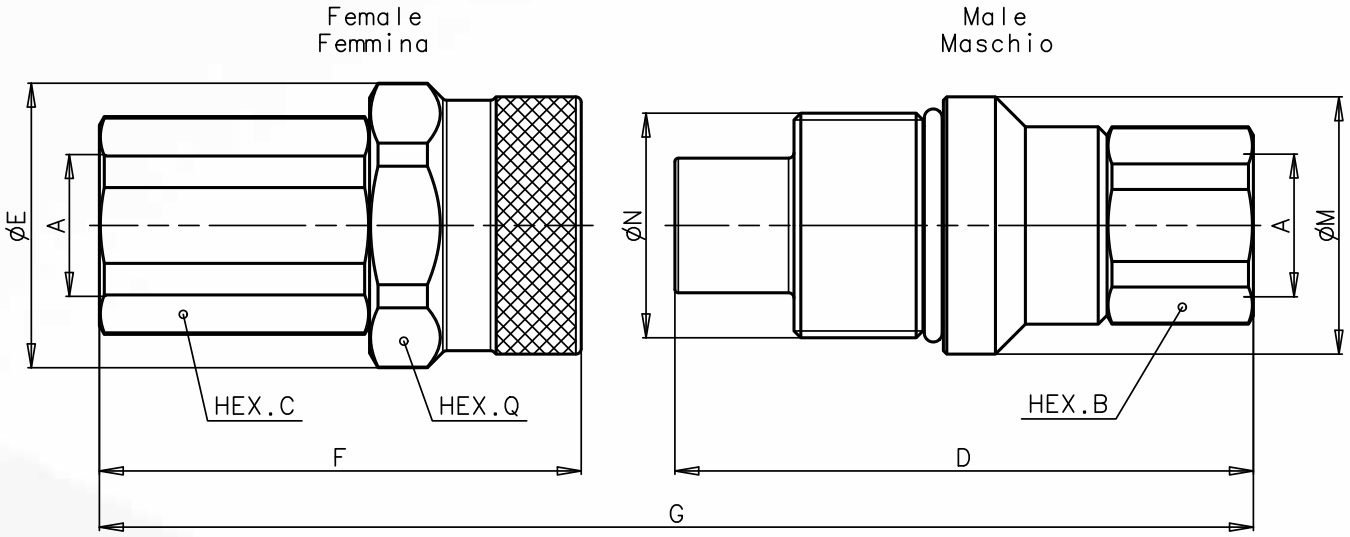
OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	M	N	Q	Unit	Weight	
													Male	Female
VEP7	1/4	mm	22	27	71	38,8	54,1	113,3	34,8	M30x2	36	Kg	0,235	0,250
1/4 NPT		Inch	0,87	1,06	2,80	1,53	2,13	4,46	1,37	-	1,42	lb	0,52	0,55
VEP9P	3/8	mm	27	30	82,5	41,8	65,8	131,3	37,8	M33x2	38	Kg	0,325	0,335
3/8 NPT		Inch	1,06	1,18	3,25	1,65	2,59	5,17	1,49	-	1,50	lb	0,72	0,74
VEP9P	1/2	mm	27	30	85	41,8	70,8	138,8	37,8	M33x2	38	Kg	0,320	0,345
1/2 NPT		Inch	1,06	1,18	3,35	1,65	2,79	5,46	1,49	-	1,50	lb	0,71	0,76
VEP13P	1/2	mm	36	36	95	49,8	77,8	154,6	45,8	M40x3	46	Kg	0,605	0,635
1/2 NPT		Inch	1,42	1,42	3,74	1,96	3,06	6,09	1,80	-	1,81	lb	1,33	1,40
VEP13P	3/4	mm	36	36	97,4	49,8	84,8	164	45,8	M40x3	46	Kg	0,590	0,600
3/4 NPT		Inch	1,42	1,42	3,83	1,96	3,34	6,46	1,80	-	1,81	lb	1,30	1,32
VEP15P	3/4	mm	36	41	99	53,8	84,9	165,4	49,8	M45x3	50	Kg	0,690	0,765
3/4 NPT		Inch	1,42	1,61	3,90	2,12	3,34	6,51	1,96	-	1,97	lb	1,52	1,69
VEP17P	3/4	mm	46	46	113,6	58,8	96,7	187,5	54,8	M50x3	55	Kg	1,065	1,168
3/4 NPT		Inch	1,81	1,81	4,47	2,31	3,81	7,38	2,16	-	2,17	lb	2,35	2,57
VEP17P	1	mm	46	46	113,6	58,8	99,7	190,5	54,8	M50x3	55	Kg	1,025	1,115
1 NPT		Inch	1,81	1,81	4,47	2,31	3,93	7,50	2,16	-	2,17	lb	2,26	2,46
VEP21P	1	mm	55	55	123,4	69,8	105,8	205,2	64,5	M58x3	65	Kg	1,540	1,780
1 NPT		Inch	2,17	2,17	4,86	2,75	4,17	8,08	2,54	-	2,56	lb	3,40	3,92
VEP21P	1-1/4	mm	55	55	123,4	69,8	106,8	206,2	64,5	M58x3	65	Kg	1,465	1,700
1-1/4 NPT		Inch	2,17	2,17	4,86	2,75	4,20	8,12	2,54	-	2,56	lb	3,23	3,75
VEP30P	1-1/4	mm	65	65	150	92	133,5	253,9	89,8	M80x4	85	Kg	3,245	3,910
1-1/4 NPT		Inch	2,56	2,56	5,91	3,62	5,26	10,00	3,54	-	3,35	lb	7,15	8,62
VEP30P	1-1/2	mm	65	65	150	92	133,5	253,9	89,8	M80x4	85	Kg	3,180	3,840
1-1/2 NPT		Inch	2,56	2,56	5,91	3,62	5,26	10,00	3,54	-	3,35	lb	7,01	8,47
VEP45P	2	mm	90	90	218,4	200	224,8	383,5	145	M130x6	-	Kg	11,670	14,760
2 NPT		Inch	3,54	3,54	8,60	7,87	8,85	15,10	5,71	-	-	lb	25,73	32,54

OVERALL DIMENSIONS



FEMALE SAE THREAD (SAE J1926-1)

Description	A	Unit	B	C	D	E	F	G	M	N	Q	Unit	Weight	
													Male	Female
VEP7	9/16-	mm	22	27	72,8	38,8	57,1	118,1	34,8	M30x2	36	Kg	0,233	0,250
3/8 SAE	18UNF	Inch	0,87	1,06	2,87	1,53	2,25	4,65	1,37	-	1,42	lb	0,51	0,55
VEP9P	3/4-	mm	27	30	87	41,8	70,8	140,8	37,8	M33x2	38	Kg	0,330	0,345
1/2 SAE	16UNF	Inch	1,06	1,18	3,43	1,65	2,79	5,54	1,49	-	1,50	lb	0,73	0,76
VEP13P	1-1/16-	mm	36	36	100,4	49,8	84,8	167	45,8	M40x3	46	Kg	0,585	0,580
3/4 SAE	12UN	Inch	1,42	1,42	3,95	1,96	3,34	6,57	1,80	-	1,81	lb	1,29	1,28
VEP15P	1-1/16-	mm	36	41	102	53,8	84,9	168,4	49,8	M45x3	50	Kg	0,675	0,585
3/4 SAE	12UN	Inch	1,42	1,61	4,02	2,12	3,34	6,63	1,96	-	1,97	lb	1,49	1,29
VEP17P	1-1/16-	mm	46	46	115,6	58,8	99,7	192,5	54,8	M50x3	55	Kg	1,065	1,168
3/4 SAE	12UN	Inch	1,81	1,81	4,55	2,31	3,93	7,58	2,16	-	2,17	lb	2,35	2,57
VEP17P	1-5/16-	mm	46	46	113,6	58,8	99,7	190,5	54,8	M50x3	55	Kg	1,010	1,115
1 SAE	12UN	Inch	1,81	1,81	4,47	2,31	3,93	7,50	2,16	-	2,17	lb	2,23	2,46
VEP21P	1-5/16-	mm	55	55	125,4	69,8	105,8	207,2	64,5	M58x3	65	Kg	1,540	1,780
1 SAE	12UN	Inch	2,17	2,17	4,94	2,75	4,17	8,16	2,54	-	2,56	lb	3,40	3,92
VEP21P	1-5/8-	mm	55	55	123,4	69,8	106,8	206,2	64,5	M58x3	65	Kg	1,460	1,680
1-1/4 SAE	12UN	Inch	2,17	2,17	4,86	2,75	4,20	8,12	2,54	-	2,56	lb	3,22	3,70
VEP30P	1-5/8-	mm	65	65	150	92	133,5	253,9	89,8	M80x4	85	Kg	3,245	3,910
1-1/4 SAE	12UN	Inch	2,56	2,56	5,91	3,62	5,26	10,00	3,54	-	3,35	lb	7,15	8,62
VEP30P	1-7/8-	mm	65	65	150	92	133,5	253,9	89,8	M80x4	85	Kg	3,155	3,815
1-1/2 SAE	12UN	Inch	2,56	2,56	5,91	3,62	5,26	10,00	3,54	-	3,35	lb	6,96	8,41
VEP45P	2-1/2-	mm	90	90	218,4	200	224,8	383,5	145	M130x6		Kg	11,885	14,680
2 SAE	12UN	Inch	3,54	3,54	8,60	7,87	8,85	15,10	5,71	-	0,00	lb	26,20	32,36

SERIES: **VEP-HD**

PATENTED

INTERCHANGE: Stucchi internal specification

MAIN APPLICATIONS

- Mobile construction equipment
- Hydraulic equipment
- Drilling rigs
- Vehicles

The "VEP-HD" screw flat face coupling series is another example of the continuous improvement of Stucchi products. Designed for heavy duty applications with high operating pressure, high impulse frequency, and mechanical stress.
The "VEP-HD" couplings are manufactured in high resistance carbon steel material treated with special nitriding treatment to increase the wear resistance of the coupling.
This series has been tested to 1'000' 000 impulse cycles.
The triple valve system allows a connection of the coupling safely even in presence of high internal residual pressure and at the same time avoiding fluid loss during the connection-disconnection process.

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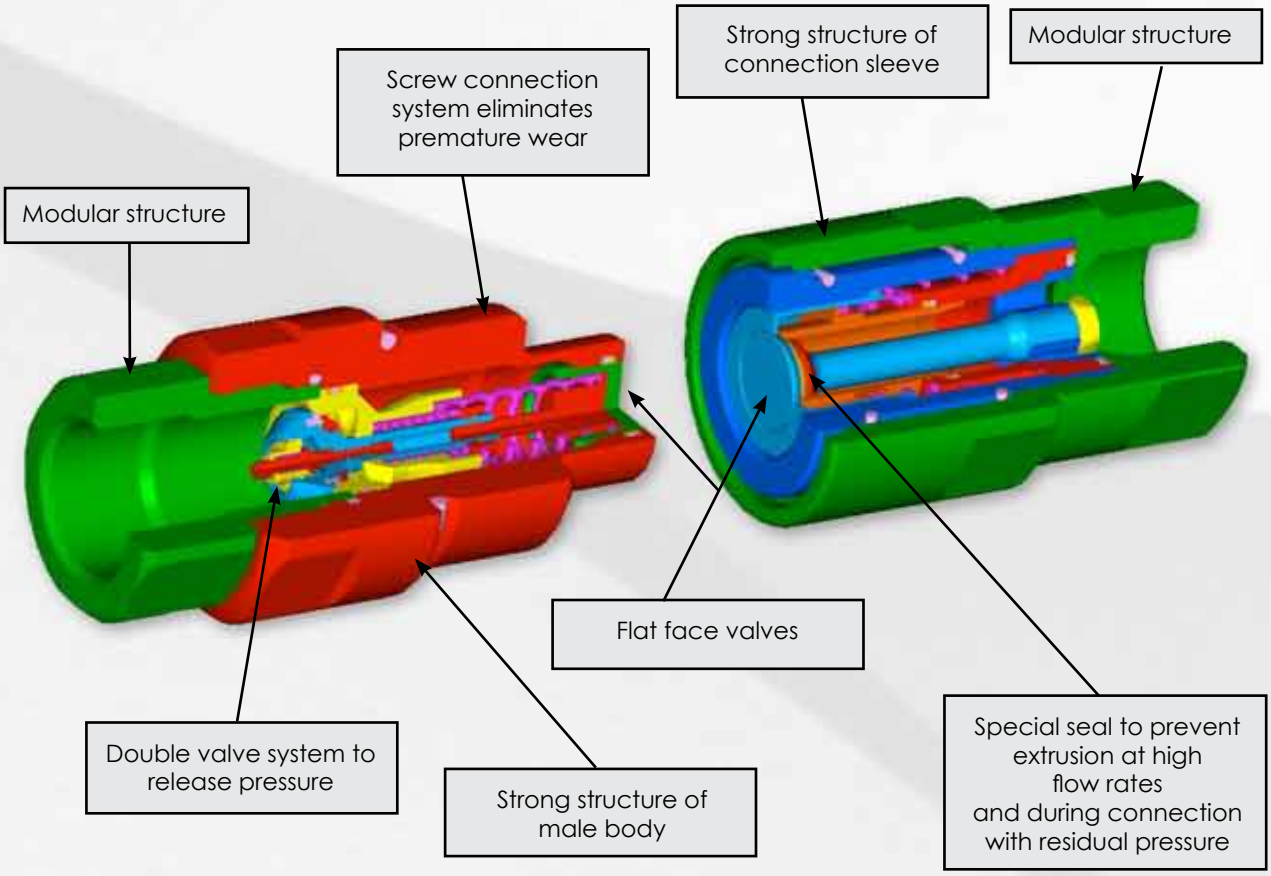
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: Stucchi internal specification
- Valve system: Flat face
- Mechanical connection: Screw system
- Connection system: Screw to connect
- Disconnection system: Unscrew to disconnect
- Connection with residual pressure: Allowed in the male coupling, female coupling or both.
- Disconnection with residual pressure: Allowed
- Threads available: BSP, NPT, SAE
- Threads on request: Flange ports, ORFS or others
- Construction material: High resistance carbon steel.
  Thread zone treatment:
  nitriding + oxidation (QPQ)
- Surface treatment: Zinc plated
- External springs: AISI 302
- Internal springs: C72 steel
- Seals: standard in NBR (Nitrile), PUR (Polyurethane), POM (Delrin)
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Internal flow of valve design creates minimal pressure drop, maintaining circuit efficiency in the system.
- Internal pressure release valve system allows an easy connection with high internal residual pressure.
- The modular design allows for broad range of port configurations.
- Optimal resistance at impulse pressures.
- Safe and simple to use.

HOW TO USE

- Before connecting clean the flat mating surface of coupling to avoid inclusion of contamination in the circuit.
- To couple pull forward the connection sleeve of the female coupling. Align the female and male coupling holding forward the connection sleeve and thread together turning the sleeve.
  Keep couplers aligned during connection process. Do not push to connect couplings.
  The screwing of the threads should be done by hand without the use of the tools for the first part of the connection.
  The use of tools for the second part of connection can be necessary if there is high residual pressure in the circuit.
  Screw the connecting sleeve of the female until metal surface contact with the male coupling is complete.
  Tighten the sleeve to the base of the male using the tightening torque spec. as indicated in the table below.
- To uncouple turn sleeve from contact position using a wrench, then unscrew making sure the couplings stay aligned through the entire process.

WARNING!

- Do not use the female coupling disconnected with impulse pressure at high frequency.
- Do not couple-uncouple with flow in the circuit. Connection only allowed with residual pressure.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps.
- It is important to limit contamination in the circuit to avoid compromising the function of the internal valves.

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect ° torque		Disconnect ° torque		Spillage *
	Inch	mm	l/min	GPM	l/min	GPM	Nm	lbf ft	Nm	lbf ft	ml
VEP17HD	3/4	-	100	26,50	200	53,00	5,6	4,13	3,6	2,65	0,018
VEP21HD	1	-	189	50,09	378	100,17	8,2	6,04	5,8	4,27	0,060
VEP30HD	1 1/2	-	288	76,32	750	198,75	26,0	19,16	12,5	9,21	0,200

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
VEP17HD	50	7250	50	7250	33	4785	125	18125	125	18125	100	14500
VEP21HD	47	6815	47	6815	30	4350	120	17400	120	17400	80	11600
VEP30HD	40	5800	40	5800	27	3915	110	15950	110	15950	80	11600

Description	Tightening torque		Max. residual pressure during connection						Max. residual pressure during disconnection	
			Male Female to drain		Female Male to drain		Male and Female			
	Nm	lbf ft	Mpa	psi	MPa	psi	MPa	psi	MPa	psi
VEP17HD	110-130	81-96	25	3625	25	3625	15	2175	15	2175
VEP21HD	125-145	92-107	25	3625	25	3625	15	2175	15	2175
VEP30HD	155-175	114-129	25	3625	25	3625	5	725	5	725

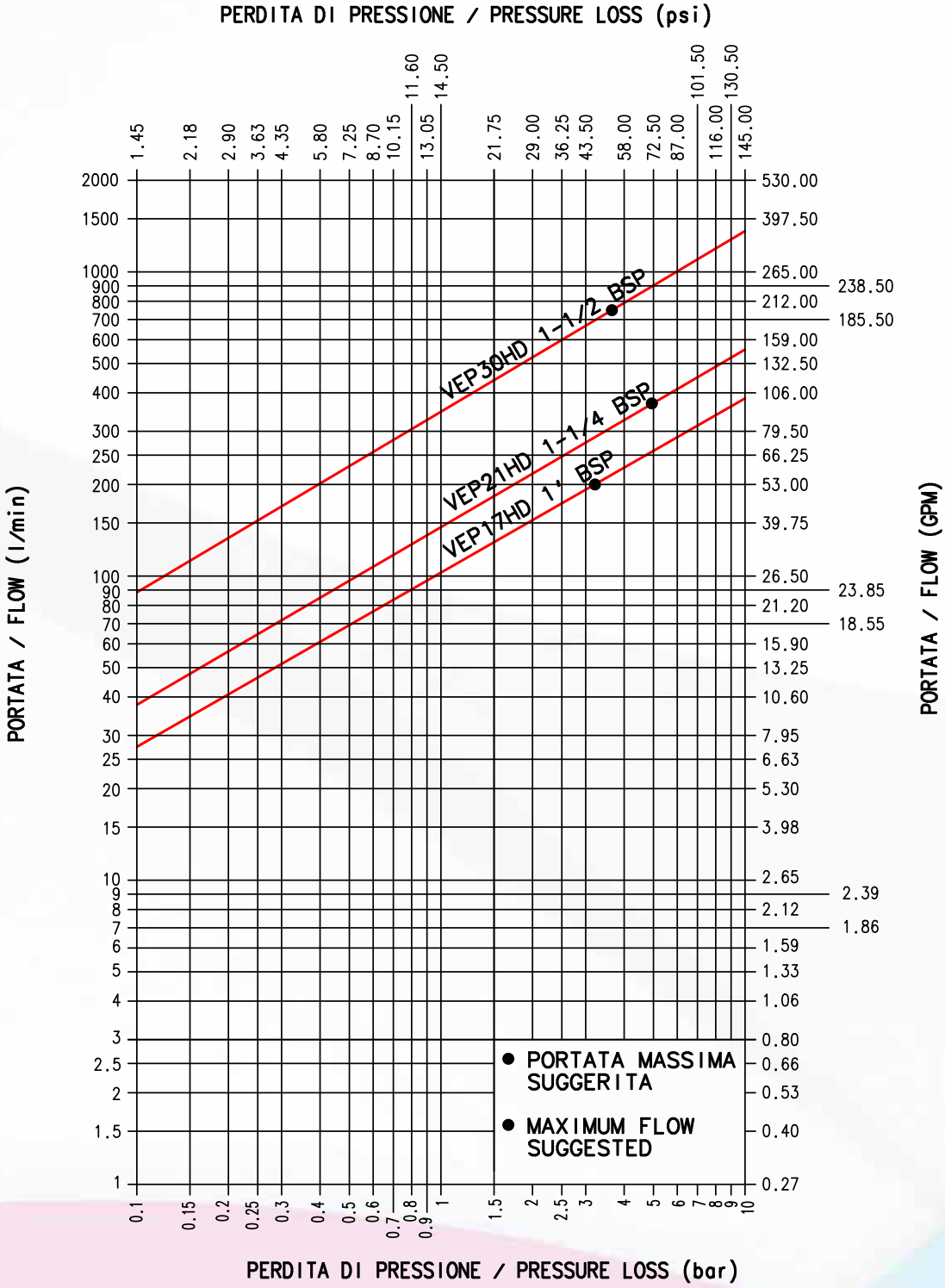
° Connect torque and disconnect torque without residual pressure. The torque increase to increasing of internal residual pressure.

* Spillage is an indicative value of the fluid loss per couple-uncouple cycle without residual pressure.

- Temperature range: Standard seals NBR, PUR, POM from -20 °C to +100 °C (from -4 °F to +212 °F).
- Tests:
  The couplings coupled and the male uncoupled, have been tested at max. operating pressure for 1'000'000 impulses in according with ISO 7241-2.
  The female uncoupled have been tested for 100'000 impulses.

PRESSURE DROP

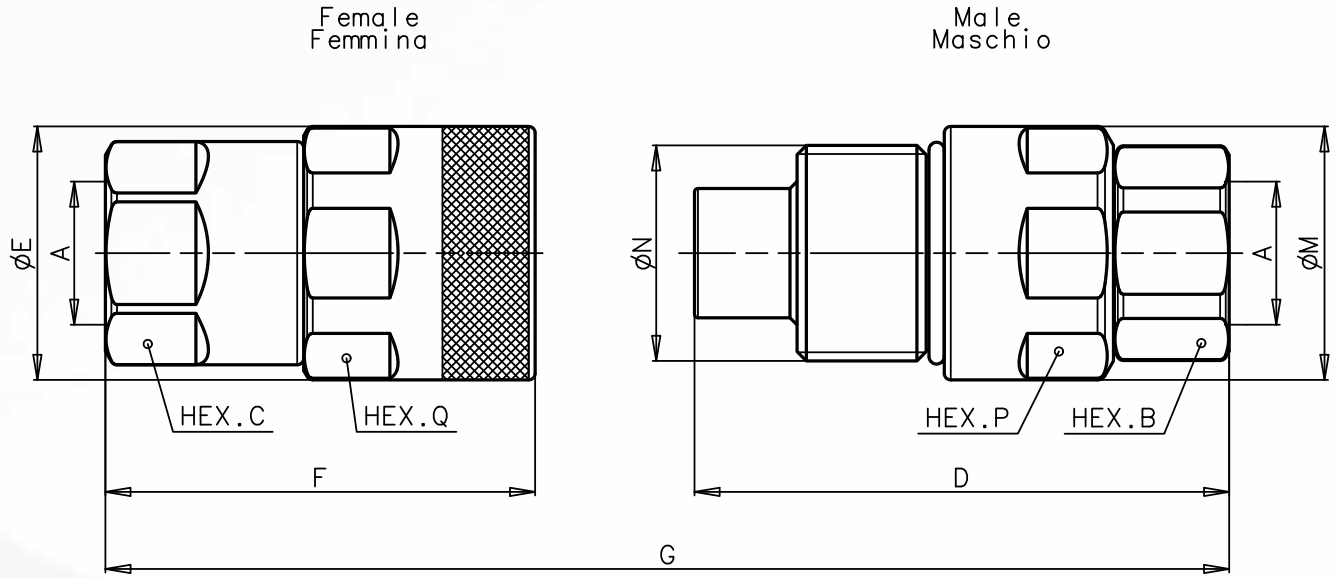
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

OVERALL DIMENSIONS



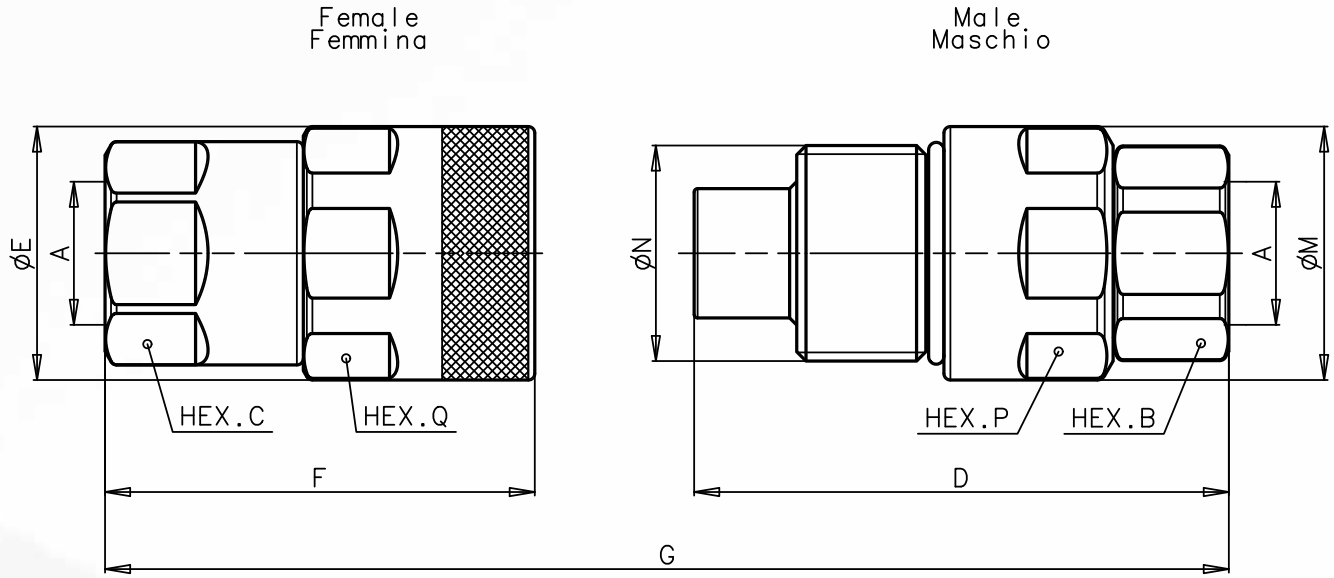
FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	M	N	P	Q	Unit	Weight	
														Male	Female
VEP17HD 3/4 BSP	3/4	mm	46	46	124	58,8	99,7	200,9	58,8	M50x3	55	55	Kg	1,350	1,330
		Inch	1,81	1,81	4,88	2,31	3,93	7,91	2,31	-	2,17	2,17	lb	2,98	2,93
VEP17HD 1 BSP	1	mm	46	46	124	58,8	99,7	200,9	58,8	M50x3	55	55	Kg	1,300	1,280
		Inch	1,81	1,81	4,88	2,31	3,93	7,91	2,31	-	2,17	2,17	lb	2,87	2,82
VEP21HD 1 BSP	1	mm	55	55	133,4	69,8	106,8	216,2	69,8	M58x3	65	65	Kg	1,890	2,120
		Inch	2,17	2,17	5,25	2,75	4,20	8,51	2,75	-	2,56	2,56	lb	4,17	4,67
VEP21HD 1-1/4 BSP	1-1/4	mm	55	5	133,4	69,8	106,8	216,2	69,8	M58x3	65	65	Kg	1,790	2,020
		Inch	2,17	2,17	5,25	2,75	4,20	8,51	2,75	-	2,56	2,56	lb	3,95	4,45
VEP30HD 1-1/4 BSP	1-1/4	mm	65	65	150	95	133,5	253,9	94,4	M80x4	75	85	Kg	3,400	4,460
		Inch	2,56	2,56	5,91	3,74	5,26	10,0	3,72	-	2,95	3,35	lb	7,50	9,83
VEP30HD 1-1/2 BSP	1-1/2	mm	65	65	150	95	133,5	253,9	94,4	M80x4	75	85	Kg	3,300	4,360
		Inch	2,56	2,56	5,91	3,74	5,26	10,0	3,72	-	2,95	3,35	lb	7,28	9,61

FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	M	N	P	Q	Unit	Weight	
														Male	Female
VEP17HD 3/4 NPT	3/4	mm	46	46	124	58,8	99,7	200,9	58,8	M50x3	55	55	Kg	1,350	1,330
		Inch	1,81	1,81	4,88	2,31	3,93	7,91	2,31	-	2,17	2,17	lb	2,98	2,93
VEP17HD 1 NPT	1	mm	46	46	12	58,8	99,7	200,9	58,8	M50x3	55	55	Kg	1,300	1,280
		Inch	1,81	1,81	4,88	2,31	3,93	7,91	2,31	-	2,17	2,17	lb	2,87	2,82
VEP21HD 1 NPT	1	mm	55	55	133,4	69,8	106,8	216,2	69,8	M58x3	65	65	Kg	1,890	2,120
		Inch	2,17	2,17	5,25	2,75	4,20	8,51	2,75	-	2,56	2,56	lb	4,17	4,67
VEP21HD 1-1/4 NPT	1-1/4	mm	55	55	133,4	69,8	106,8	216,2	69,8	M58x3	65	65	Kg	1,790	2,020
		Inch	2,17	2,17	5,25	2,75	4,20	8,51	2,75	-	2,56	2,56	lb	3,95	4,45
VEP30HD 1-1/4 NPT	1-1/4	mm	65	65	150	95	133,5	253,9	94,4	M80x4	75	85	Kg	3,400	4,460
		Inch	2,56	2,56	5,91	3,74	5,26	10,0	3,72	-	2,95	3,35	lb	7,50	9,83
VEP30HD 1-1/2 NPT	1-1/2	mm	65	65	150	95	133,5	253,9	94,4	M80x4	75	85	Kg	3,300	4,360
		Inch	2,56	2,56	5,91	3,74	5,26	10,0	3,72	-	2,95	3,35	lb	7,28	9,61

OVERALL DIMENSIONS



FEMALE SAE THREAD (SAE J1926-1)

Description	A	Unit	B	C	D	E	F	G	M	N	P	Q	Unit	Weight	
														Male	Female
VEP17HD 3/4 SAE	1-1/16- 12UN	mm Inch	46 1,81	46 1,81	127 5,00	58,8 2,31	100,7 3,96	204,9 8,07	58,8 2,31	M50x3 -	55 2,17	55 2,17	Kg lb	1,350 2,98	1,330 2,93
VEP17HD 1 SAE	1-5/16- 12UN	mm Inch	46 1,81	46 1,81	124 4,88	58,8 2,31	100,7 3,96	201,9 7,95	58,8 2,31	M50x3 -	55 2,17	55 2,17	Kg lb	1,290 2,84	1,270 2,80
VEP21HD 1 SAE	1-5/16- 12UN	mm Inch	55 2,17	55 2,17	133,4 5,25	69,8 2,75	106,8 4,20	216,2 8,51	69,8 2,75	M58x3 -	65 2,56	65 2,56	Kg lb	1,890 4,17	2,120 4,67
VEP21HD 1-1/4 SAE	1-5/18- 12UN	mm Inch	55 2,17	55 2,17	133,4 5,25	69,8 2,75	106,8 4,20	216,2 8,51	69,8 2,75	M58x3 -	65 2,56	65 2,56	Kg lb	1,780 3,92	2,010 4,43
VEP30HD 1-1/4 SAE	1-5/18- 12UN	mm Inch	65 2,56	65 2,56	150 5,91	95 3,74	133,5 5,26	253,9 10,0	94,4 3,72	M80x4 -	75 2,95	85 3,35	Kg lb	3,400 7,50	4,460 9,83
VEP30HD 1-1/2 SAE	1-7/8- 12UN	mm Inch	65 2,56	65 2,56	150 5,91	95 3,74	133,5 5,26	253,9 10,0	94,4 3,72	M80x4 -	75 2,95	85 3,35	Kg lb	3,280 7,23	4,335 9,56

SERIES: **A-HP**

PATENTED

INTERCHANGE: Stucchi internal specification

MAIN APPLICATIONS

- Rescue equipment
- Hydraulic tools
- Hydraulic jacks
- Industrial equipment

"A-HP" is the flat face coupling series designed for high pressure hydraulic applications up to 720 bar / 10,440 psi.
The couplings are manufactured with high resistance carbon steel. The flat face design eliminates leakage during connecting and disconnecting. For safety, the couplings are designed not to interchange with lower pressure couplings and the automatic safety lock prevents accidental disconnection. " A-HP" series is used in applications where high operating pressure is necessary with maximum safety features.

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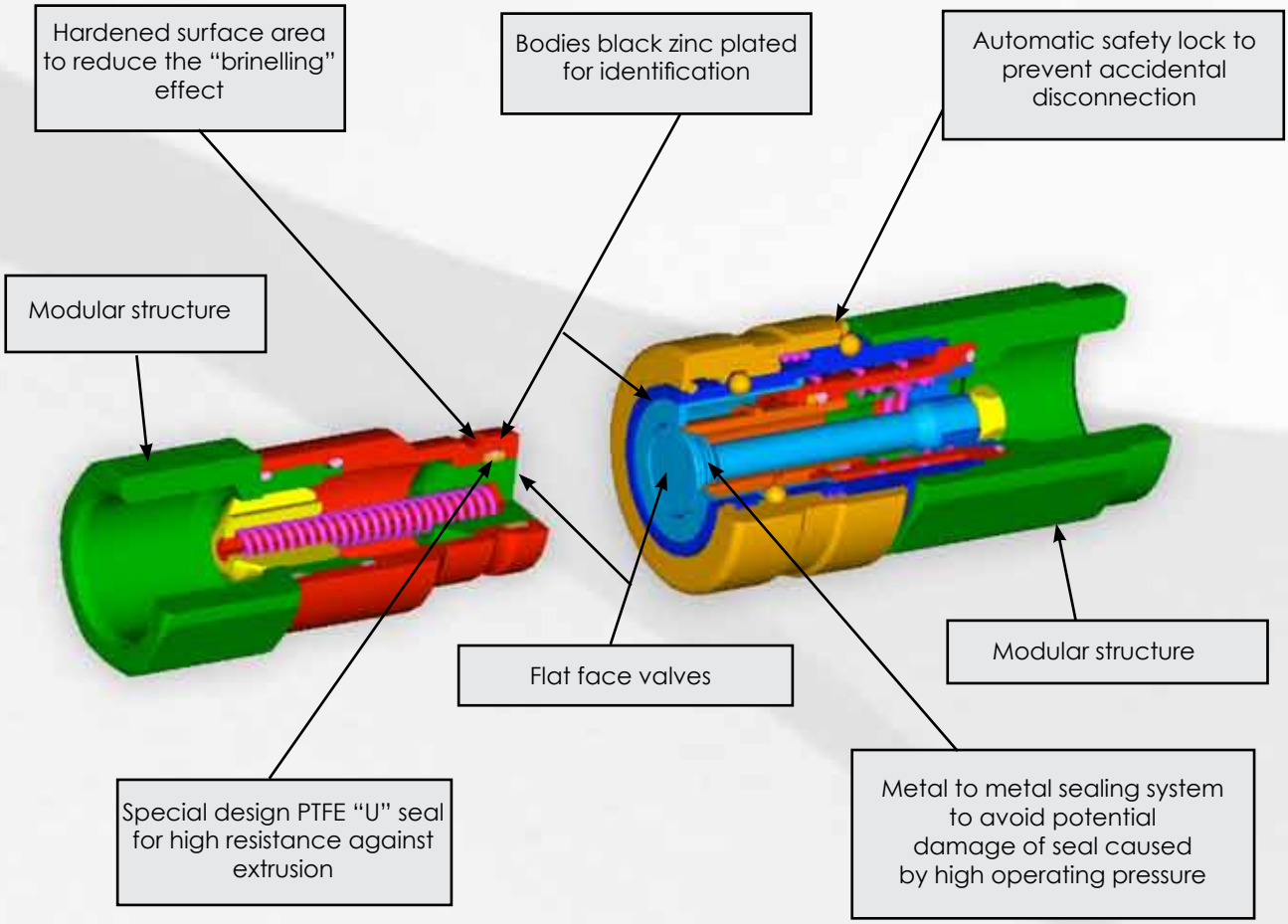
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: Stucchi internal specification
- Valve system: Flat face
- Mechanical connection: Locking balls
- Connection system: Push to connect
- Disconnection system: Pulling back the sleeve of female
- Connection with residual pressure: Not allowed
- Disconnection with residual pressure: Not allowed
- Threads available: NPT, BSP
- Threads on request: Male NPT
- Construction material: High resistance carbon steel
- Surface treatment: CrIII zinc plated
- External springs: AISI 302
- Internal springs: C72 steel
- Locking ball material: Hard steel 100 C6
- Seals: NBR (Nitrile)
- Seals on request: Others kinds
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Internal design reduces pressure drop, increasing circuit efficiency.
- The automatic safety lock to prevent accidental disconnection, avoids to the operator to make two movements saving time to connect. This benefit is very important mainly for the rescue equipment.
- The modular structure allows broad range of port configurations.
- Compact slim design.
- Safe and simple to use.

HOW TO USE

- Before to couple clean the flat mating surface of quick coupling to avoid the inclusion of dirty in the circuit.
- To couple push the male half towards the female half or vice versa until the coupler sleeve clicks. Upon connection the safety sleeve automatically rotates engaging the safety lock mechanism. In this safety lock position the coupling can not be disconnected until the operator aligns the sleeve in the proper position (safety locking ball aligned with groove in the coupler sleeve).
- To uncouple turn the external sleeve until the sleeve lock groove is aligned with the safety locking ball and pull back the sleeve.

WARNING!

- Do not use the female coupling disconnected with impulse pressure at high frequency.
- Do not couple-uncouple with flow and/or pressure in the circuit.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect force		Disconnect force		Spillage*
	Inch	mm	l/min	GPM	l/min	GPM	N	lbf	N	lbf	ml
A4HP	1/8	-	3	0,80	6	1,59	95	21,38	40	9,00	0,040
A5HP	1/4	-	12	3,18	24	6,36	125	28,13	45	10,13	0,020
A9HP	3/8	-	23	6,10	46	12,19	205	46,13	50	11,25	0,020

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
A4HP	72	10440	72	10440	72	10440	160	23200	160	23200	160	23200
A5HP	72	10440	72	10440	50	7250	200	29000	200	29000	150	21750
A9HP	72	10440	72	10440	42	6090	180	26100	200	29000	125	18125

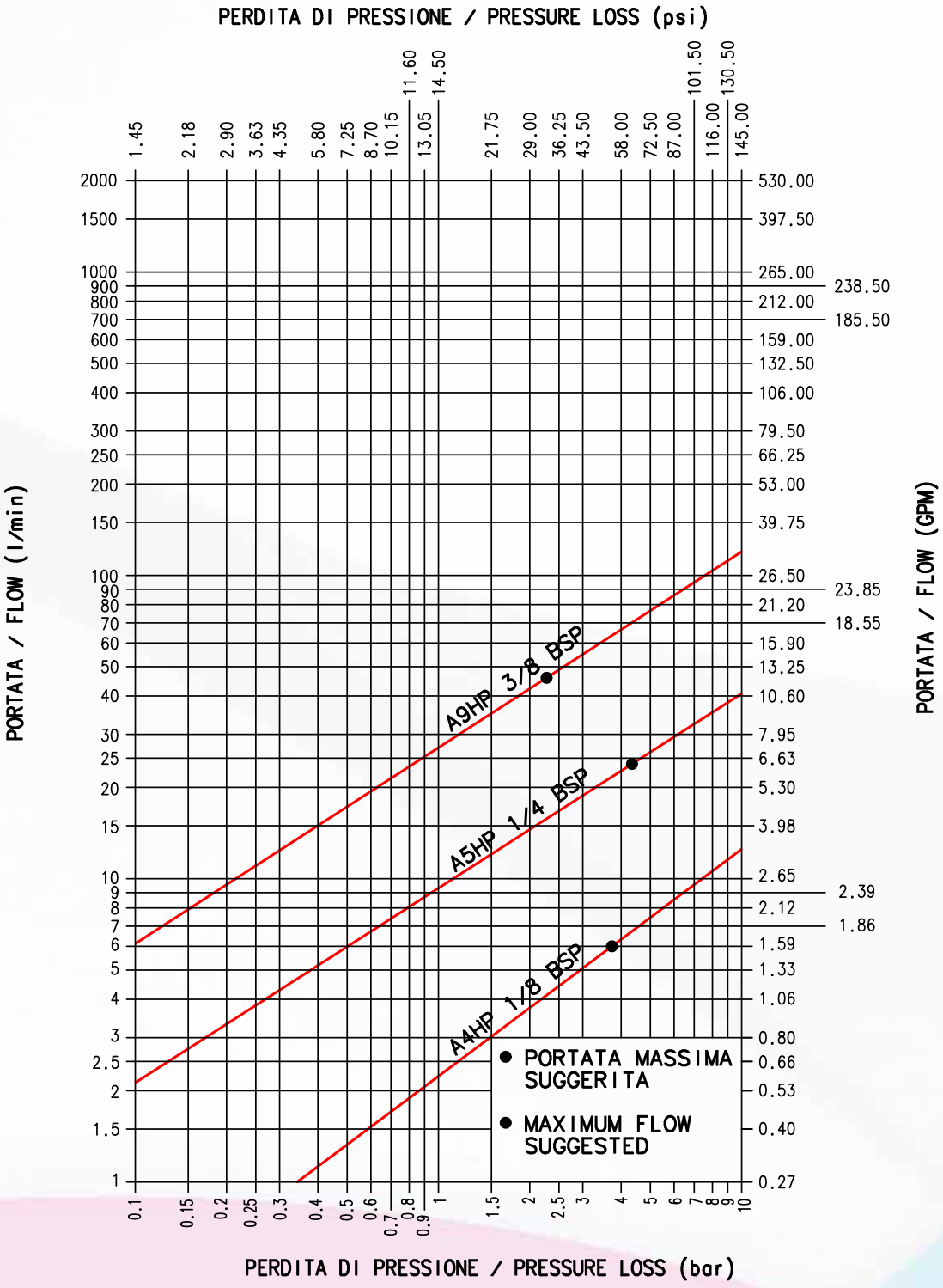
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle.

- Temperature range:
- Standard seals NBR (Nitrile): from -20 °C to +100 °C (from -4 °F to +212 °F).

- Tests:
- The couplings have been tested at max. operating pressure for 100'000 impulses in according with ISO 7241-2. A4HP has been tested for 10'000 impulses.

PRESSURE DROP

TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



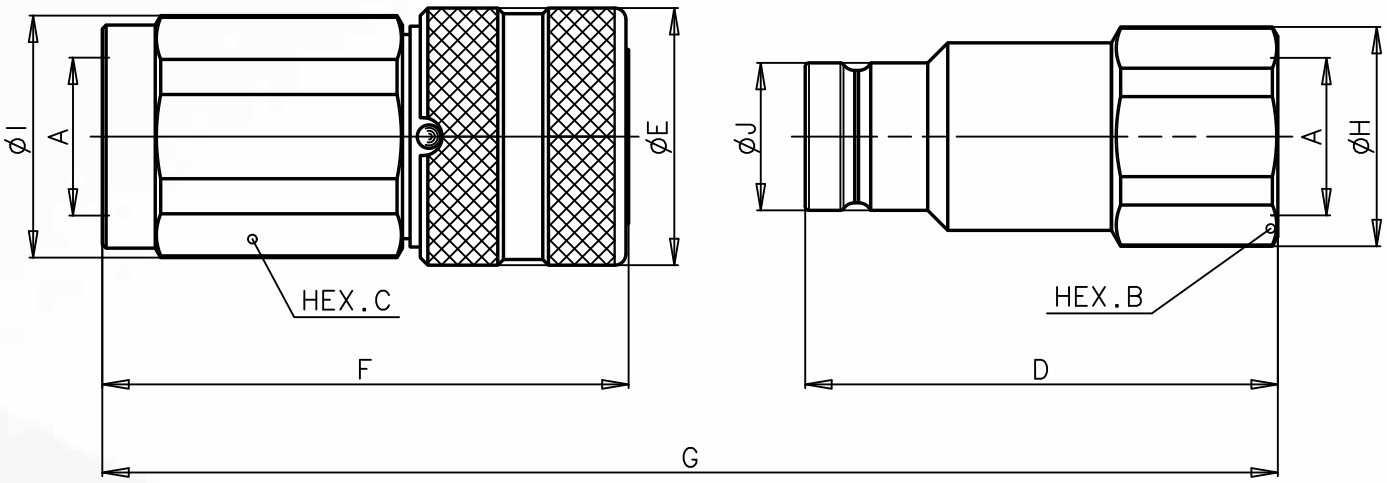
FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

OVERALL DIMENSIONS

Female
Femmina

Male
Maschio



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
A4HP 1/8 NPT	1/8	mm Inch	17,0 0,67	17,0 0,67	36,2 1,43	22,0 0,87	44,0 1,73	72,3 2,85	18,5 0,73	21,8 0,86	12,0 0,47	Kg lb	0,041 0,09	0,090 0,20
A5HP 1/4 NPT	1/4	mm Inch	22,0 0,87	22,0 0,87	47,9 1,89	29,0 1,14	58,0 2,28	94,9 3,74	23,8 0,94	29,0 1,14	16,5 0,65	Kg lb	0,090 0,20	0,205 0,45
A5HP 3/8 NPT	3/8	mm Inch	24,0 0,94	24,0 0,94	54,9 2,16	29,0 1,14	60,0 2,36	103,9 4,09	26,0 1,02	29,0 1,14	16,5 0,65	Kg lb	0,107 0,24	0,209 0,46
A9HP 3/8 NPT	3/8	mm Inch	27,0 1,06	30,0 1,18	60,0 2,36	34,0 1,34	64,6 2,54	108,8 4,28	29,0 1,14	32,0 1,26	19,5 0,77	Kg lb	0,153 0,34	0,322 0,71
A9HP 1/2 NPT	1/2	mm Inch	27,0 1,06	30,0 1,18	62,5 2,46	34,0 1,34	69,6 2,74	116,3 4,58	29,0 1,14	32,0 1,26	19,5 0,77	Kg lb	0,144 0,32	0,308 0,68

FEMALE BSPP THREAD (DIN 3852) (Not preferred for high pressure)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
A4HP 1/8 BSP	1/8	mm Inch	17,0 0,67	17,0 0,67	36,2 1,43	22,0 0,87	44,0 1,73	72,3 2,85	18,5 0,73	21,8 0,86	12,0 0,47	Kg lb	0,041 0,09	0,093 0,21
A5HP 1/4 BSP	1/4	mm Inch	22,0 0,87	22,0 0,87	47,9 1,89	29,0 1,14	58,0 2,28	94,9 3,74	23,8 0,94	29,0 1,14	16,5 0,65	Kg lb	0,087 0,19	0,204 0,45
A5HP 3/8 BSP	3/8	mm Inch	24,0 0,94	24,0 0,94	54,9 2,16	29,0 1,14	60,0 2,36	103,9 4,09	26,0 1,02	29,0 1,14	16,5 0,65	Kg lb	0,087 0,19	0,204 0,45
A9HP 3/8 BSP	3/8	mm Inch	27,0 1,06	30,0 1,18	60,0 2,36	34,0 1,34	64,6 2,54	108,8 4,28	29,0 1,14	32,0 1,26	19,5 0,77	Kg lb	0,151 0,33	0,298 0,66
A9HP 1/2 BSP	1/2	mm Inch	27,0 1,06	30,0 1,18	62,5 2,46	34,0 1,34	69,6 2,74	116,3 4,58	29,0 1,14	32,0 1,26	19,5 0,77	Kg lb	0,153 0,34	0,304 0,67

SERIES: **FL**

INTERCHANGE: ISO 16028 and NFPA T3.20.15 (HTMA)

MAIN APPLICATIONS

- Offshore - Marine
- Chemical - Pharmaceutical
- Industrial equipment
- Food Industry

The "FL" flat face coupling series is the Stucchi solution for applications in high corrosion environments and/or for corrosive fluid transfer. The "FL" couplings are manufactured in stainless steel AISI 316, standard seals are Viton / Flourocarbon with the option of other seal materials upon request for use with various fluids and operating temperatures. The features of flat face couplings in stainless steel to eliminate leakage during connection-disconnection, reduce contamination in the circuit, and offer optimal resistance to corrosion make "FL" series ideal for applications such as: offshore, marine, industrial equipment, chemical, Pharmaceutical and food processing.

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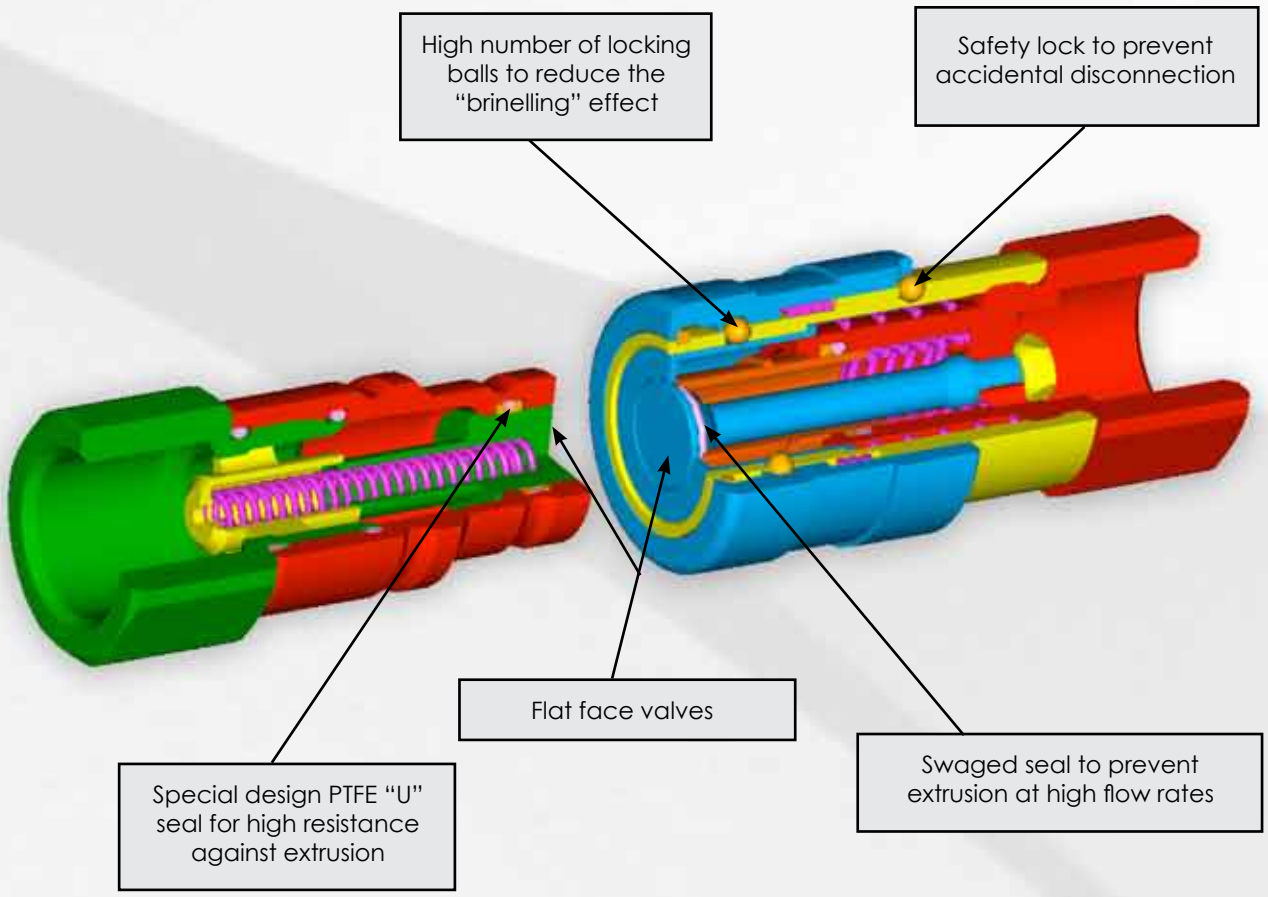
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: ISO 16028 (from size 6.3 to 25) HTMA (size 10)
- Valve system: Flat face
- Mechanical connection: Locking balls
- Connection system: Pushing to connect
- Disconnection system: Pushing back the sleeve of female
- Connection with residual pressure: Not allowed
- Disconnection with residual pressure: Not allowed
- Threads available: BSP, NPT
- Threads on request: SAE (J1926-1)
- Construction material: Stainless steel AISI 316
- Springs: AISI 302
- Locking ball material: AISI 316
- Seals: Standard in VITON
- Seals on request: NBR (Nitrile), EPDM, KALREZ or others
- Anti-extrusion rings: PTFE
- Accessories on request: Caps in AISI 316



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Linear flow reduces internal turbulence and pressure drop, maintaining circuit efficiency in the entire system.
- Optimal resistance to the corrosion for long life of couplings.
- Compact slim design.
- Safe and simple to use.

HOW TO USE

- Before to couple clean the flat mating surface of quick coupling to avoid the inclusion of dirty in the circuit.
- To couple push the male half towards the female half or vice versa.
- After connection turn the external sleeve to engage lock function, to prevent accidental disconnection.
- To uncouple turn the external sleeve until the sleeve lock groove corresponds with the safety lock ball and pull back the sleeve.

WARNING!

- Do not use the female coupling disconnected with impulse pressure.
- Do not couple-uncouple with flow and/or pressure in the circuit.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps.
  The plastic caps of "FIRG-A" series are suitable for "FL" couplings.
  On request caps in stainless steel AISI 316.

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect force		Disconnect force		Spillage *
	Inch	mm	l/min	GPM	l/min	GPM	N	lbf	N	lbf	ml
FL4	1/8	-	3	0,80	6	1,59	140	31,50	30	6,75	0,005
FL7	1/4	6,3	12	3,18	24	6,36	160	36,00	45	10,13	0,006
FL9	3/8	10,0	23	6,10	46	12,19	160	36,00	45	10,13	0,012
FL13	1/2	12,5	45	11,93	90	23,85	200	45,00	60	13,50	0,020
FL15	5/8	16,0	74	19,61	148	39,22	200	45,00	60	13,50	0,026
FL17	3/4	19,0	100	26,50	200	53,00	200	45,00	60	13,50	0,032
FL21	1	25,0	189	50,09	378	100,17	280	63,00	90	20,25	0,035
FL27	1-1/2	-	288	76,32	750	198,75	580	130,50	160	36,00	0,050
FL45	2	-	379	100,44	1000	265,00	490	110,25	70	15,75	0,100

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
FL4	35	5075	35	5075	33	4785	140	20300	140	20300	120	17400
FL7	35	5075	35	5075	12	1740	140	20300	120	17400	48	6960
FL9	35	5075	35	5075	15	2175	140	20300	120	17400	60	8700
FL13	35	5075	35	5075	15	2175	120	17400	110	15950	60	8700
FL15	35	5075	30	4350	12	1740	120	17400	100	14500	48	6960
FL17	33	4785	28	4060	12	1740	100	14500	80	11600	48	6960
FL21	28	4060	28	4060	12	1740	90	13050	80	11600	48	6960
FL27	23	3335	23	3335	8	1160	80	11600	70	10150	32	4640
FL45	15	2175	15	2175	7	1015	60	8700	60	8700	28	4060

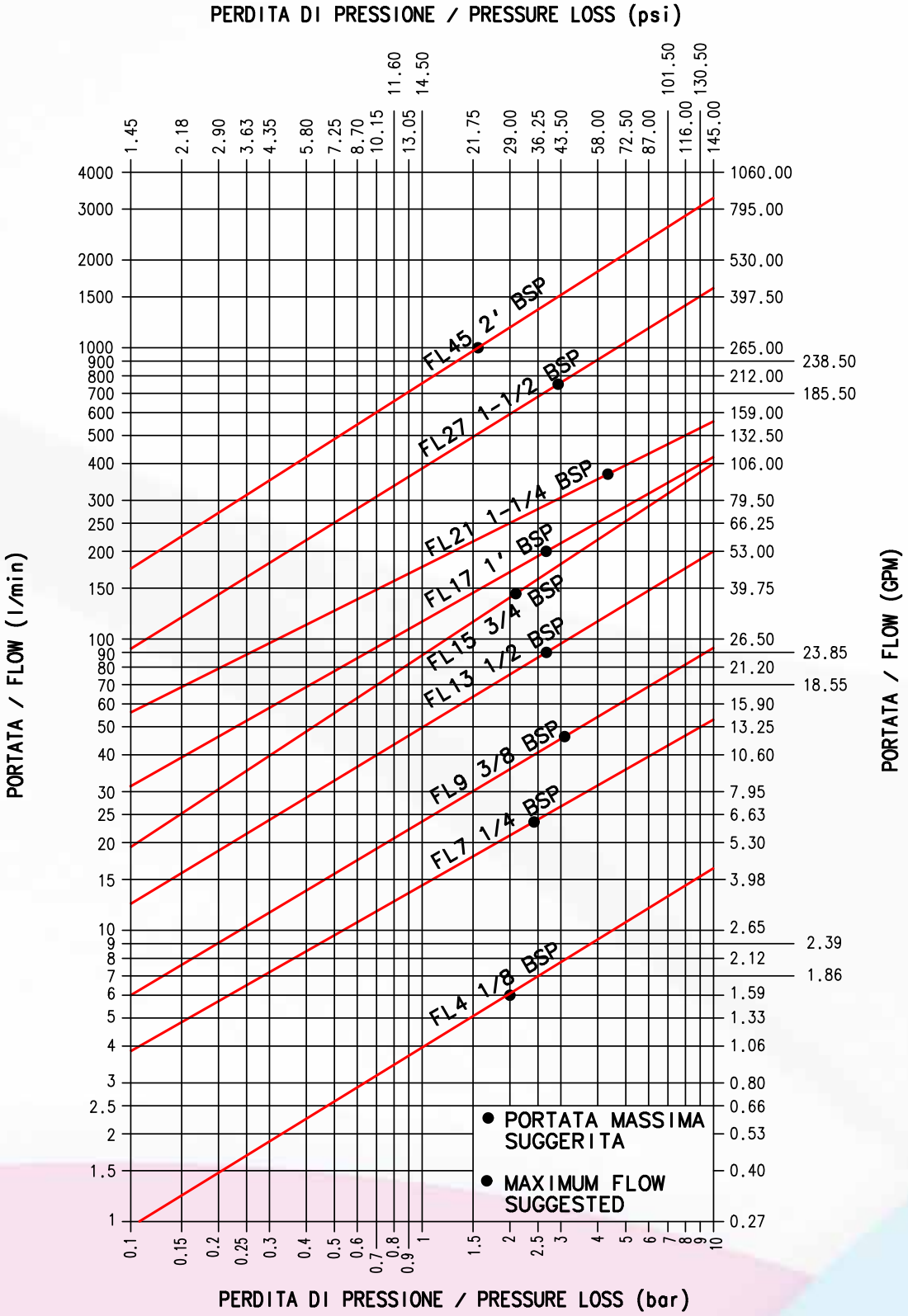
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle.

• Temperature range:
- Standard seals VITON : from -15°C to +180°C (from +5 °F to +356 °F).
- NBR (Nitrile) seals: from -20 °C to +100 °C (from -4 °F to +212 °F).
- EPDM (Ethylene Propylene) seals: from -40 °C to +150 °C (from -40 °F to +302 °F).
- KALREZ seals: from -25 °C to +300 °C (from -13 °F to +572 °F).
The couplings with Kalrez seals for high temperature use, can be used at max. operating pressure of 5 Mpa (725 psi).

• Tests:
- The couplings have been tested at max. operating pressure for 100.000 impulses in according with ISO 7241-2.

PRESSURE DROP

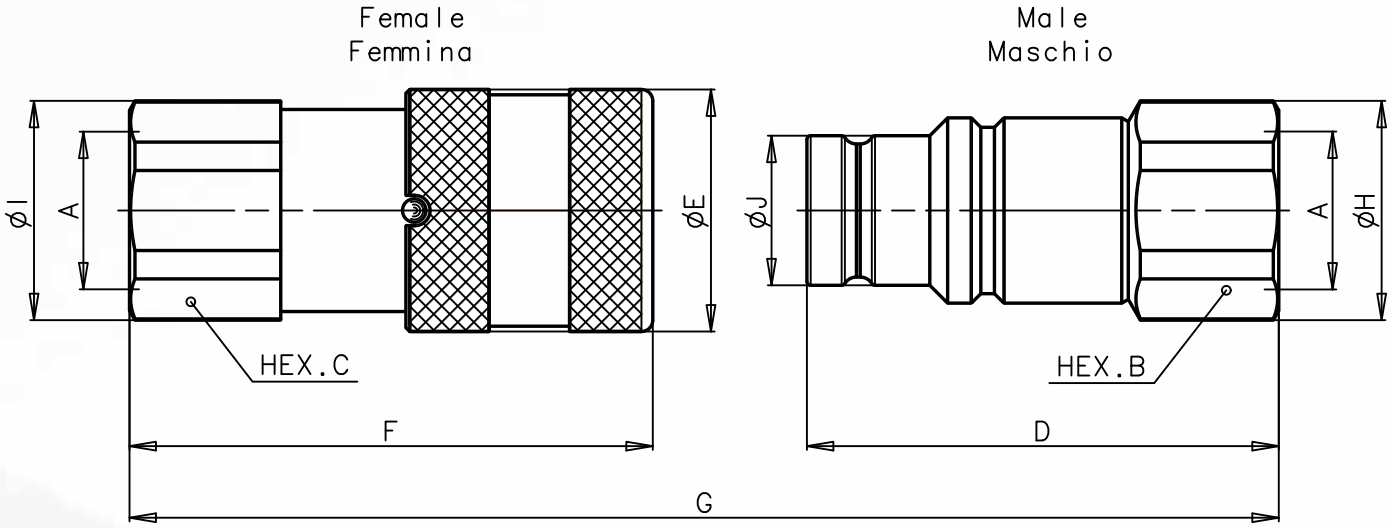
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

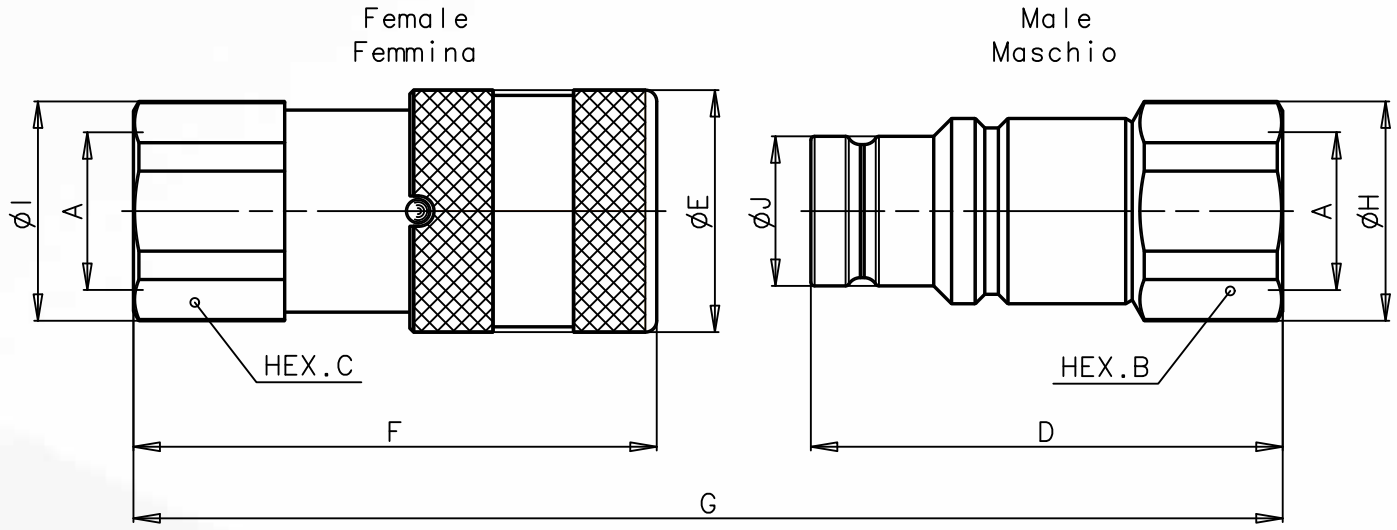
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FL4	1/8	mm	17	19	36,3	20	40	68,4	18,5	20,5	11,6	Kg	0,037	0,074
1/8 BSP		Inch	0,67	0,75	1,43	0,79	1,57	2,69	0,73	0,81	0,46	lb	0,08	0,16
FL7	1/4	mm	22	22	49,4	28	48,3	86,7	23,8	23,8	16,1	Kg	0,098	0,142
1/4 BSP		Inch	0,87	0,87	1,94	1,10	1,90	3,41	0,94	0,94	0,63	lb	0,22	0,31
FL9	3/8	mm	24	27	59,9	32	64,2	108,6	26	29	19,7	Kg	0,124	0,245
3/8 BSP		Inch	0,94	1,06	2,36	1,26	2,53	4,28	1,02	1,14	0,78	lb	0,27	0,54
FL9	1/2	mm	27	27	62,4	32	69,2	116,1	29	29	19,7	Kg	0,120	0,242
1/2 BSP		Inch	1,06	1,06	2,46	1,26	2,72	4,57	1,14	1,14	0,78	lb	0,26	0,53
FL13	1/2	mm	32	32	70,5	38	73,8	127	33,8	33,8	24,5	Kg	0,259	0,378
1/2 BSP		Inch	1,26	1,26	2,78	1,50	2,91	5,00	1,33	1,33	0,96	lb	0,57	0,83
FL13	3/4	mm	36	36	70,5	38	80,8	134	38,5	38,5	24,5	Kg	0,255	0,375
3/4 BSP		Inch	1,42	1,42	2,78	1,50	3,18	5,28	1,52	1,52	0,96	lb	0,56	0,83
FL15	3/4	mm	36	36	70,5	42	80,9	133,8	38,5	38,5	27	Kg	0,282	0,492
3/4 BSP		Inch	1,42	1,42	2,78	1,65	3,19	5,27	1,52	1,52	1,06	lb	0,62	1,08
FL17	1	mm	46	46	82,2	48	92,9	153,3	49,5	49,5	30	Kg	0,432	0,795
1 BSP		Inch	1,81	1,81	3,24	1,89	3,66	6,04	1,95	1,95	1,18	lb	0,95	1,75
FL21	1-1/4	mm	55	55	90	55	106,2	173	59,8	59,8	36	Kg	0,672	1,226
1-1/4 BSP		Inch	2,17	2,17	3,54	2,17	4,18	6,81	2,35	2,35	1,42	lb	1,48	2,70
FL27	1-1/2	mm	70	65	111	80	132,4	214,8	76	72	57	Kg	1,890	2,908
1-1/2 BSP		Inch	2,76	2,56	4,37	3,15	5,21	8,46	2,99	2,83	2,24	lb	4,17	6,41
FL45	2	mm	75	80	123,8	100	156,6	241,5	83,5	88,5	73	Kg	2,290	5,230
2 BSP		Inch	2,95	3,15	4,87	3,94	6,17	9,51	3,29	3,48	2,87	lb	5,05	11,53

OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FL4	1/8	mm	17	19	36,3	20	40	68,4	18,5	20,5	11,6	Kg	0,040	0,075
1/8 NPT		Inch	0,67	0,75	1,43	0,79	1,57	2,69	0,73	0,81	0,46	lb	0,09	0,17
FL7	1/4	mm	22	22	47,9	28	48,3	85,2	23,8	23,8	16,1	Kg	0,094	0,143
1/4 NPT		Inch	0,87	0,87	1,89	1,10	1,90	3,35	0,94	0,94	0,63	lb	0,21	0,32
FL9	3/8	mm	24	27	59,9	32	64,2	108,6	26	29	19,7	Kg	0,137	0,245
3/8 NPT		Inch	0,94	1,06	2,36	1,26	2,53	4,28	1,02	1,14	0,78	lb	0,30	0,54
FL9	1/2	mm	27	27	62,4	32	69,2	116,1	29	29	19,7	Kg	0,135	0,242
1/2 NPT		Inch	1,06	1,06	2,46	1,26	2,72	4,57	1,14	1,14	0,78	lb	0,30	0,53
FL13	1/2	mm	32	32	68	38	73,8	124,5	33,8	33,8	24,5	Kg	0,259	0,378
1/2 NPT		Inch	1,26	1,26	2,68	1,50	2,91	4,90	1,33	1,33	0,96	lb	0,57	0,83
FL13	3/4	mm	36	36	70,5	38	80,8	134	38,5	38,5	24,5	Kg	0,266	0,416
3/4 NPT		Inch	1,42	1,42	2,78	1,50	3,18	5,28	1,52	1,52	0,96	lb	0,59	0,92
FL15	3/4	mm	36	36	70,5	42	80,9	133,8	38,5	38,5	27	Kg	0,280	0,495
3/4 NPT		Inch	1,42	1,42	2,78	1,65	3,19	5,27	1,52	1,52	1,06	lb	0,62	1,09
FL17	1	mm	46	46	82,2	48	92,9	153,3	49,5	49,5	30	Kg	0,432	0,810
1 NPT		Inch	1,81	1,81	3,24	1,89	3,66	6,04	1,95	1,95	1,18	lb	0,95	1,79
FL21	1-1/4	mm	55	55	90	55	106,2	173	59,8	59,8	36	Kg	0,672	1,226
1-1/4 NPT		Inch	2,17	2,17	3,54	2,17	4,18	6,81	2,35	2,35	1,42	lb	1,48	2,70
FL27	1-1/2	mm	70	65	111	80	132,4	214,8	76	72	57	Kg	1,896	2,908
1-1/2 NPT		Inch	2,76	2,56	4,37	3,15	5,21	8,46	2,99	2,83	2,24	lb	4,18	6,41
FL45	2	mm	75	80	123,8	100	156,6	241,5	83,5	88,5	73	Kg	2,290	5,230
2 NPT		Inch	2,95	3,15	4,87	3,94	6,17	9,51	3,29	3,48	2,87	lb	5,05	11,53

SERIES: **FIRG-Q**

INTERCHANGE: ISO 16028 and NFPA T3.20.15 (HTMA)

MAIN APPLICATIONS

- Industrial equipment
- Cooling systems
- Steel industry

The "FIRG-Q" flat-face couplings series is the solution for mildly corrosive environments and/or for relatively corrosive fluid transfer (ex.: sweet water, water and glycol etc).
Products are manufactured in carbon steel and treated with special nitriding and oxidation treatment.
The internal valve material is stainless steel AISI303 and can be supplied with a variety of seals for fluid compatibility and operating temperature requirements.
The flat face design eliminates leakage during connection-disconnection and reduces contamination in the circuit.
The combined features of the flat face design with greater resistance to corrosion makes "FIRG-Q" series ideal for several applications, mainly in the industrial field.

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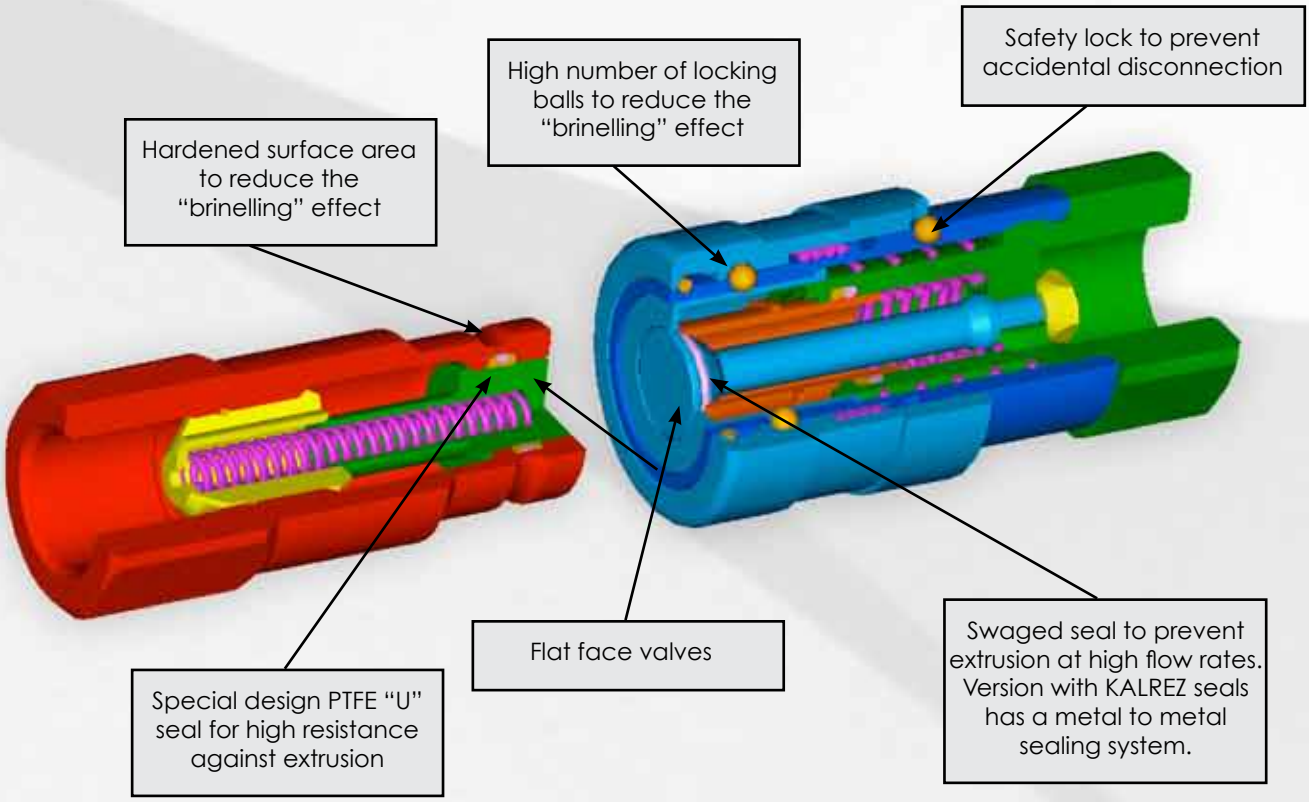
TECHNICAL FEATURES AND OPTIONS

- Interchangeability: ISO 16028 (from size 6.3 to 25) HTMA (size 10)
- Valve system: Flat face
- Mechanical connection: Locking balls
- Connection system: Push to connect
- Disconnection system: Pulling back the sleeve of female
- Connection with residual pressure: Not allowed
- Disconnection with residual pressure: Not allowed
- Threads available: BSP, NPT
- Threads on request: SAE (J1926-1)
- Construction material: High resistance carbon steel with special treatment nitriding + oxidation (QPQ) Internal valves in AISI 303
- Spring: AISI 302
- Locking Ball material: AISI 420
- Seals: NBR (Nitrile), VITON, EPDM and KALREZ
- Seals on request: HNBR or others
- Anti-extrusion rings: PTFE



BENEFITS

- Flat face is easy to clean, helping to reduce the inclusion of contamination to the hydraulic circuit.
- Minimal fluid loss during connection / disconnection, reducing fluid loss to the environment.
- Minimal air inclusion during connection / disconnection, enhancing correct function of the circuit.
- Linear flow reduces internal turbulence and pressure drop, maintaining circuit efficiency in the entire system.
- Superior corrosion resistance compared to zinc plating in specific corrosive environments.
- Good resistance at impulse pressures.
- Compact slim design.
- Safe and simple to use.

HOW TO USE

- Before to couple clean the flat mating surface of quick coupling to avoid the inclusion of dirty in the circuit.
- To couple push the male half towards the female half or vice versa.
- After connection turn the external sleeve to engage lock function, to prevent accidental disconnection.
- To uncouple turn the external sleeve until the sleeve lock groove corresponds with the safety lock ball and pull back the sleeve.

WARNING!

- Do not use the female coupling disconnected with impulse pressure.
- Do not couple-uncouple with flow and/or pressure in the circuit.
- Do not couple-uncouple when the temperature inside of the circuit is higher than 80 °C (176 °F).
- When the couplings are disconnected, it is suggested to use the protection caps.
  The plastic caps for "FIRG-A" series are suitable with "FIRG-Q" couplings.

PERFORMANCE

Description	Size	ISO Size	Rated flow		Max. flow suggested		Connect force		Disconnect force		Spillage*
	Inch	mm	l/min	GPM	l/min	GPM	N	lbf	N	lbf	ml
FIRG14Q	1/4	6,3	12	3,18	24	6,36	130	29,25	45	10,13	0,006
FIRG38Q-12Q	3/8	10,0	23	6,10	46	12,19	160	36,00	35	7,88	0,012
FIRG12A-34Q	1/2	12,5	45	11,93	90	23,85	240	54,00	65	14,63	0,020
FIRG34BQ	5/8	16,0	74	19,61	148	39,22	190	42,75	60	13,50	0,026
FIRG100Q	3/4	19,0	100	26,50	200	53,00	220	49,50	70	15,75	0,032
FIRG114Q	1	25,0	189	50,09	378	100,17	310	69,75	100	22,50	0,035
FIRG112Q	1-1/2	-	288	76,32	750	198,75	400	90,00	100	22,50	0,050
FIRG200Q	2	-	379	100,44	1000	265,00	370	83,25	70	15,75	0,100

(Data valid for couplings with NBR, VITON, EPDM seals)

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
FIRG14Q	30	4350	30	4350	12	1740	120	17400	120	17400	48	6960
FIRG38Q-12Q	30	4350	30	4350	15	2175	120	17400	120	17400	60	8700
FIRG12A-34Q	25	3625	25	3625	12	1740	100	14500	100	14500	48	6960
FIRG34BQ	25	3625	25	3625	12	1740	100	14500	100	14500	48	6960
FIRG100Q	25	3625	25	3625	10	1450	100	14500	90	13050	40	5800
FIRG114Q	25	3625	25	3625	10	1450	100	14500	90	13050	40	5800
FIRG112Q	20	2900	20	2900	8	1160	60	8700	60	8700	32	4640
FIRG200Q	20	2900	20	2900	8	1160	60	8700	60	8700	32	4640

(Data valid for couplings with KALREZ seals for high temperature)

Description	Max. operating pressure						Burst pressure					
	Coupled		Male		Female		Coupled		Male		Female	
	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi
FIRG14QK	5	725	5	725	5	725	120	17400	120	17400	40	5800
FIRG38-12QK	5	725	5	725	5	725	120	17400	120	17400	48	6960
FIRG12A-34QK	5	725	5	725	5	725	100	14500	100	14500	48	6960
FIRG34BQK	5	725	5	725	5	725	100	14500	100	14500	40	5800
FIRG100QK	5	725	5	725	5	725	100	14500	90	13050	60	8700
FIRG114QK	5	725	5	725	5	725	100	14500	90	13050	60	8700
FIRG112QK	5	725	5	725	5	725	40	5800	40	5800	32	4640
FIRG200QK	5	725	5	725	5	725	40	5800	40	5800	32	4640

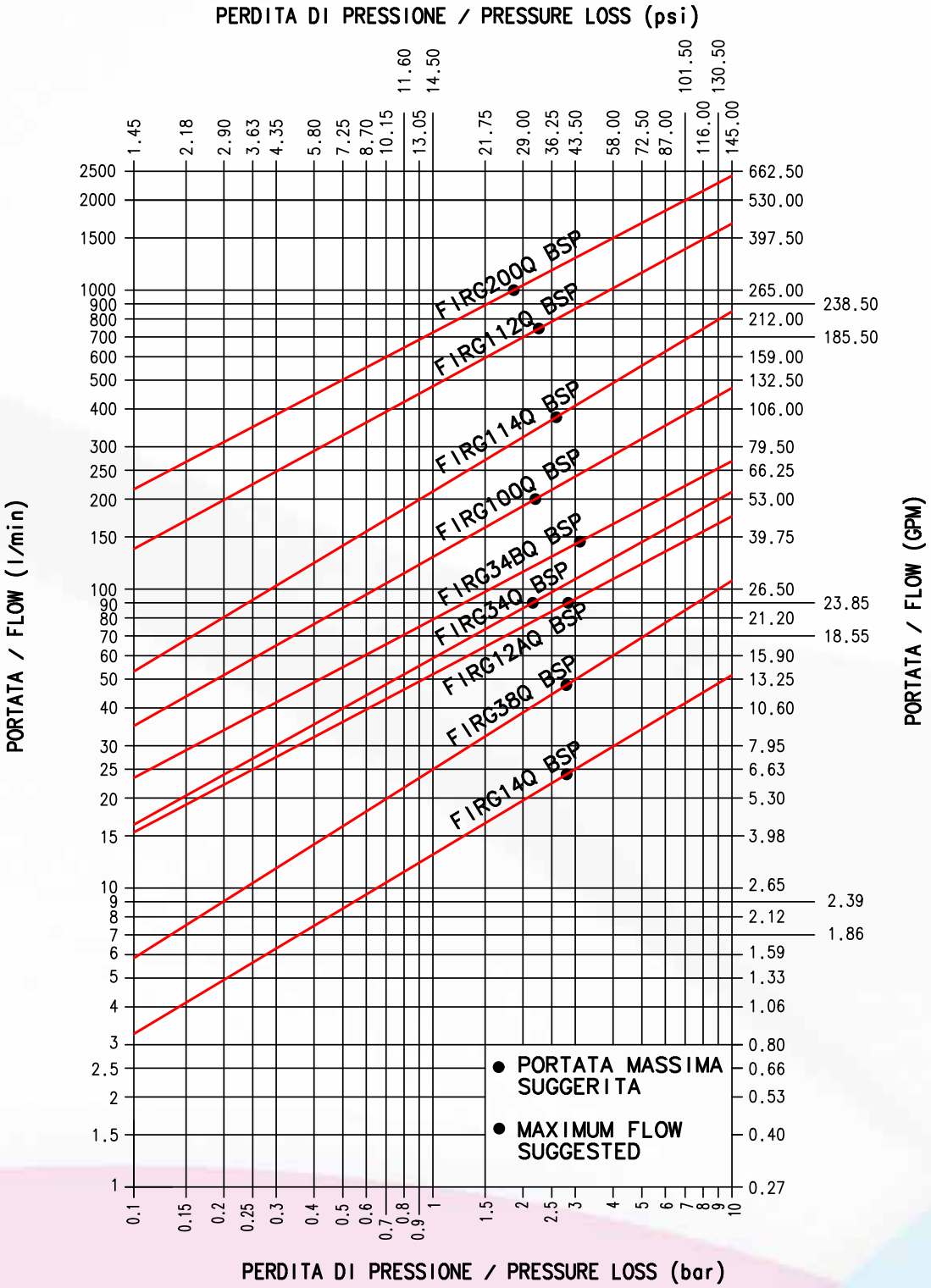
* Spillage is an indicative value of the fluid loss per couple-uncouple cycle.

- Temperature range:
- NBR (Nitrile) selas: from -20 °C to +100 °C (from -4 °F to +212 °F).
- VITON seals: from -15°C to +180°C (from +5 °F to +356 °F).
- EPDM (Ethylene Propylene) seals: from -40°C to +150°C (from -40 °F to +302 °F).
- KALREZ seals: from -25°C to +300°C (from -13 °F to +572 °F).

- Tests:
- The couplings have been tested at max. operating pressure for 100'000 impulses in according with ISO 7241-2.

PRESSURE DROP

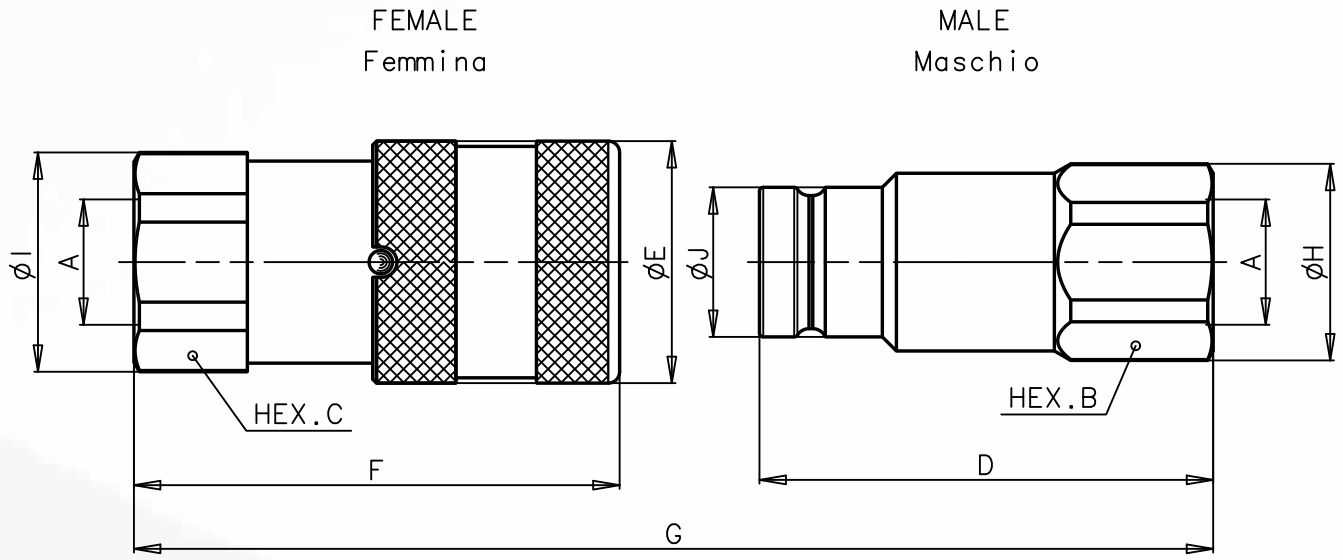
TESTS ESEGUITI IN CONFORMITA' A ISO 7241-2
TESTS IN ACCORDANCE WITH ISO 7241-2



FLUIDO: OLIO ISO VG32
TEMPERATURA: 40°C
VISCOSITA': 28.8-35.2 mm²/s

FLUID: OIL ISO VG32
TEMPERATURE: 40°C
VISCOSITY: 28.8-35.2 mm²/s

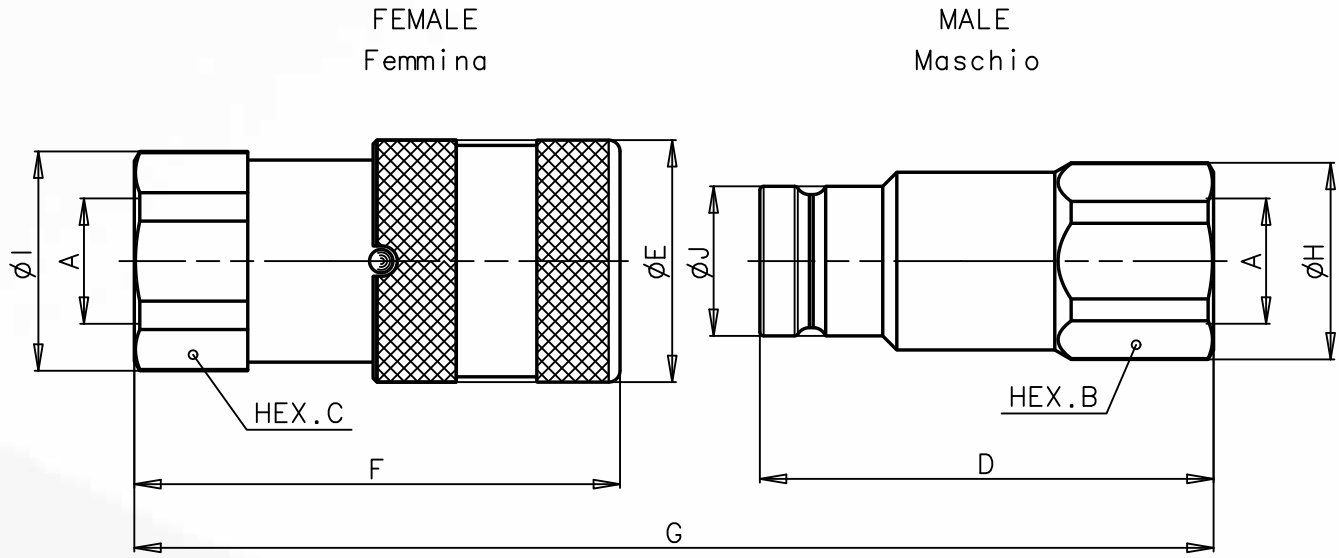
OVERALL DIMENSIONS



FEMALE BSPP THREAD (DIN 3852)

Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FIRG14Q BSP	1/4	mm Inch	22 0,87	22 0,87	47,9 1,89	28 1,10	48,1 1,89	85,2 3,35	23,8 0,94	24 0,94	16,1 0,63	Kg lb	0,086 0,19	0,140 0,31
FIRG38Q BSP	3/8	mm Inch	24 0,94	27 1,06	60 2,36	32 1,26	64,2 2,53	108,7 4,28	26 1,02	29 1,14	19,7 0,78	Kg lb	0,122 0,27	0,233 0,51
FIRG12Q BSP	1/2	mm Inch	27 1,06	27 1,06	62,5 2,46	32 1,26	69,2 2,72	116,2 4,57	29 1,14	29 1,14	19,7 0,78	Kg lb	0,120 0,26	0,230 0,51
FIRG12AQ BSP	1/2	mm Inch	32 1,26	32 1,26	68 2,68	38 1,50	73,8 2,91	124,5 4,90	33,8 1,33	33,8 1,33	24,5 0,96	Kg lb	0,230 0,51	0,370 0,82
FIRG34Q BSP	3/4	mm Inch	36 1,42	36 1,42	70,5 2,78	38 1,50	80,8 3,18	134 5,28	38,5 1,52	38,5 1,52	24,5 0,96	Kg lb	0,230 0,51	0,370 0,82
FIRG34BQ BSP	3/4	mm Inch	36 1,42	36 1,42	70,5 2,78	42 1,65	78,5 3,09	131,4 5,17	38,5 1,52	38,5 1,52	27 1,06	Kg lb	0,268 0,59	0,471 1,04
FIRG100Q BSP	1	mm Inch	45 1,77	45 1,77	82,3 3,24	48 1,89	93,2 3,67	153,5 6,04	47,8 1,88	47,8 1,88	30 1,18	Kg lb	0,395 0,87	0,765 1,69
FIRG114Q BSP	1-1/4	mm Inch	55 2,17	55 2,17	89,8 3,54	55 2,17	106 4,17	172,8 6,80	59,8 2,35	59,8 2,35	36 1,42	Kg lb	0,643 1,42	1,200 2,65
FIRG112Q BSP	1-1/2	mm Inch	70 2,76	65 2,56	111 4,37	80 3,15	132,4 5,21	214,8 8,46	76 2,99	72 2,83	57 2,24	Kg lb	1,862 4,10	2,823 6,22
FIRG200Q BSP	2	mm Inch	75 2,95	80 3,15	123,8 4,87	100 3,94	156,6 6,17	241,5 9,51	83,5 3,29	88,5 3,48	73 2,87	Kg lb	2,259 4,98	5,100 11,24

OVERALL DIMENSIONS



FEMALE NPT THREAD (ANSI B.1.20.3)

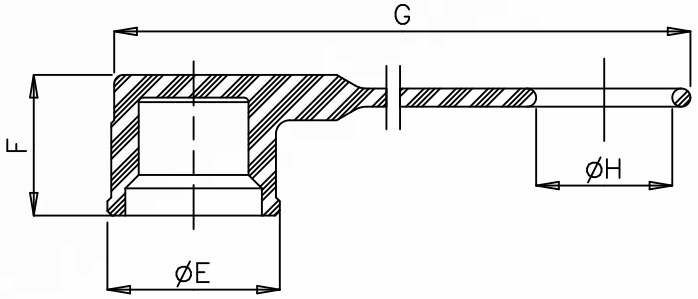
Description	A	Unit	B	C	D	E	F	G	H	I	J	Unit	Weight	
													Male	Female
FIRG14Q NPT	1/4	mm Inch	22 0,87	22 0,87	47,9 1,89	28 1,10	48,1 1,89	85,2 3,35	23,8 0,94	24 0,94	16,1 0,63	Kg lb	0,085 0,19	0,135 0,30
FIRG38Q NPT	3/8	mm Inch	24 0,94	27 1,06	60 2,36	32 1,26	64,2 2,53	108,7 4,28	26 1,02	29 1,14	19,7 0,78	Kg lb	0,120 0,26	0,240 0,53
FIRG12Q NPT	1/2	mm Inch	27 1,06	27 1,06	62,5 2,46	32 1,26	69,2 2,72	116,2 4,57	29 1,14	29 1,14	19,7 0,78	Kg lb	0,130 0,29	0,236 0,52
FIRG12AQ NPT	1/2	mm Inch	32 1,26	32 1,26	68 2,68	38 1,50	73,8 2,91	124,5 4,90	33,8 1,33	33,8 1,33	24,5 0,96	Kg lb	0,239 0,53	0,384 0,85
FIRG34Q NPT	3/4	mm Inch	36 1,42	36 1,42	70,5 2,78	38 1,50	80,8 3,18	134 5,28	38,5 1,52	38,5 1,52	24,5 0,96	Kg lb	0,227 0,50	0,430 0,95
FIRG34BQ NPT	3/4	mm Inch	36 1,42	36 1,42	70,5 2,78	42 1,65	78,5 3,09	131,4 5,17	38,5 1,52	38,5 1,52	27 1,06	Kg lb	0,268 0,59	0,473 1,04
FIRG100Q NPT	1	mm Inch	45 1,77	45 1,77	82,3 3,24	48 1,89	93,2 3,67	153,5 6,04	47,8 1,88	47,8 1,88	30 1,18	Kg lb	0,406 0,90	0,765 1,69
FIRG114Q NPT	1-1/4	mm Inch	55 2,17	55 2,17	89,8 3,54	55 2,17	106 4,17	172,8 6,80	59,8 2,35	59,8 2,35	36 1,42	Kg lb	0,645 1,42	1,240 2,73
FIRG112Q NPT	1-1/2	mm Inch	70 2,76	65 2,56	111 4,37	80 3,15	132,4 5,21	214,8 8,46	76 2,99	72 2,83	57 2,24	Kg lb	1,865 4,11	2,820 6,22
FIRG200Q NPT	2	mm Inch	75 2,95	80 3,15	123,8 4,87	100 3,94	156,6 6,17	241,5 9,51	83,5 3,29	88,5 3,48	73 2,87	Kg lb	2,259 4,98	5,100 11,24

PROTECTION CAPS FOR FIRG - A, VP-P, VEP-P AND VEP-HD SERIES

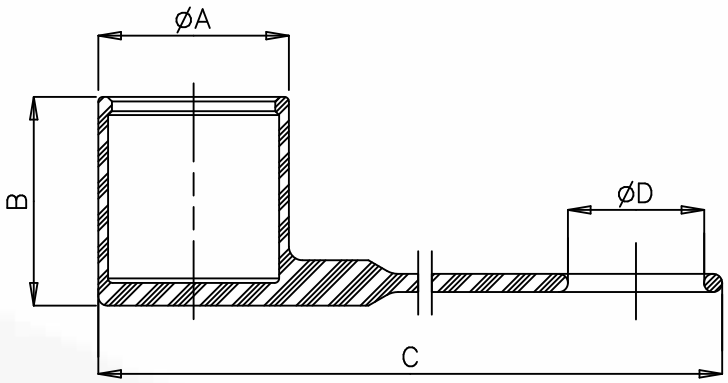
Protective caps are always recommended to protect the couplings from damage, dirt inclusion, and will increase the product life. This is particularly important in mobile applications where exposure to weather and aggregate materials are common.
The protection caps for FIRG-A series are available in three kind of materials:
- PVC (from FIRG14-A7 to FIRG114-A21)
- Aluminum (from A25 to FIRG200)
- Nylon (from FIRG38-A9 to FIRG100-A17)

The protection caps for VP-P, VEP-P and VEP-HD series are manufactured in anodizing aluminum.

OVERALL DIMENSIONS PROTECTION CAPS FOR FIRG-A SERIES



TAPPO PER INNESTO
MASCHIO
Cap of male half

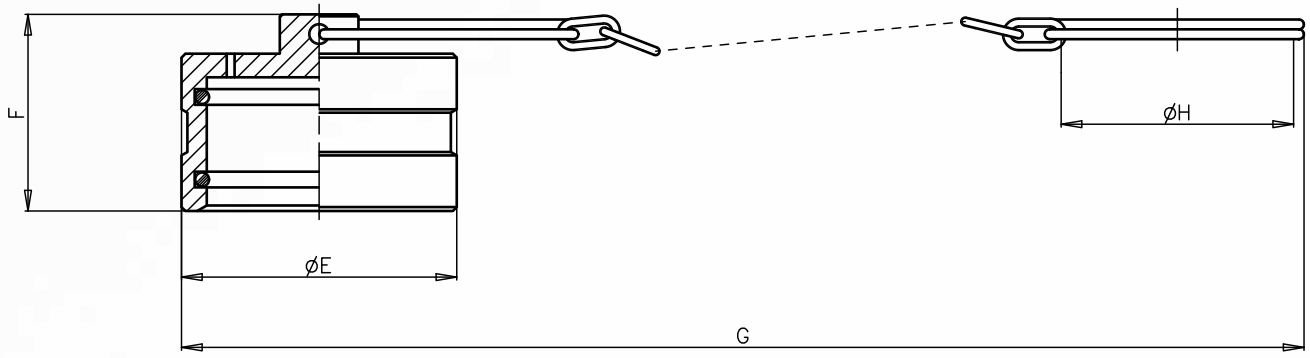


TAPPO PER INNESTO
FEMMINA
Cap of female half

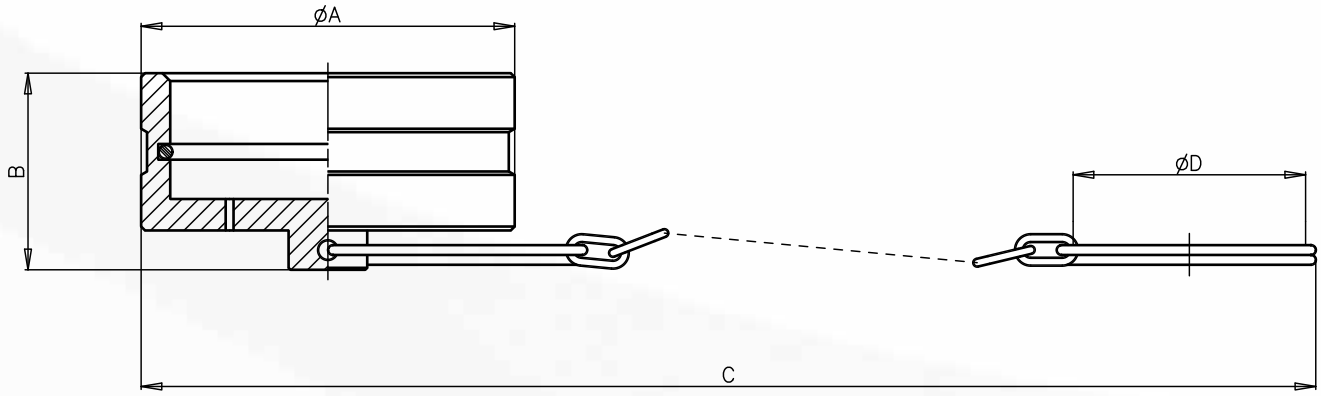
PVC CAPS
- Available in following colors: Red, yellow, blue, black and green.
- Temperature range: from -20 °C to +100 °C (from -4 °F to +212 °F).

Description	Coupling	Unit	A	B	C	D	E	F	G	H	Unit	Weight
P-7B	F-FIRG14 F-A7	mm Inch	32 1,26	38 1,50	239 9,41	20 0,79	- -	- -	- -	- -	Kg lb	0,017 0,04
D-7	M-FIRG14 M-A7	mm Inch	- -	- -	- -	- -	28 1,10	23 0,91	230 9,06	20 0,79	Kg lb	0,010 0,02
P-9D	F-FIRG38 F-A9 3/8	mm Inch	36 1,42	43 1,69	247 9,72	25 0,98	- -	- -	- -	- -	Kg lb	0,022 0,05
D-9S	M-FIRG38 M-A9 3/8	mm Inch	- -	- -	- -	- -	32 1,26	28 1,10	233 9,17	20 0,79	Kg lb	0,015 0,03
P-9D	F-FIRG12 F-A9 1/2	mm Inch	36 1,42	43 1,69	247 9,72	25 0,98	- -	- -	- -	- -	Kg lb	0,022 0,05
D-9L	M-FIRG12 M-A9 1/2	mm Inch	- -	- -	- -	- -	32 1,26	28 1,10	235 9,25	25 0,98	Kg lb	0,015 0,03
P-13D	F-FIRG12A F-A13 1/2	mm Inch	42 1,65	46 1,81	256 10,08	25 0,98	- -	- -	- -	- -	Kg lb	0,032 0,07
D-13S	M-FIRG12A M-A13 1/2	mm Inch	- -	- -	- -	- -	38 1,50	31,5 1,24	248 9,76	25 0,98	Kg lb	0,020 0,04
P-13F	F-FIRG34 F-A13 3/4	mm Inch	42 1,65	46 1,81	259 10,20	30 1,18	- -	- -	- -	- -	Kg lb	0,032 0,07
D-13L	M-FIRG34 M-A13 3/4	mm Inch	- -	- -	- -	- -	38 1,50	31,5 1,24	248 9,76	30 1,18	Kg lb	0,020 0,04
P-15F	F-FIRG34B F-A15	mm Inch	46 1,81	50 1,97	265 10,43	30 1,18	- -	- -	- -	- -	Kg lb	0,038 0,08
D-15F	M-FIRG34B M-A15	mm Inch	- -	- -	- -	- -	42 1,65	28 1,10	256 10,08	30 1,18	Kg lb	0,036 0,08
P-17G	F-FIRG100 F-A17	mm Inch	52 2,05	62 2,44	318 12,52	35 1,38	- -	- -	- -	- -	Kg lb	0,058 0,13
D-17G	M-FIRG100 M-A17	mm Inch	- -	- -	- -	- -	48 1,89	35 1,38	310 12,20	35 1,38	Kg lb	0,063 0,14
P-21H	F-FIRG114 F-A21	mm Inch	60 2,36	68 2,68	335 13,19	45 1,77	- -	- -	- -	- -	Kg lb	0,080 0,18
D-21H	M-FIRG114 M-A21	mm Inch	- -	- -	- -	- -	55 2,17	38,5 1,52	324 12,76	45 1,77	Kg lb	0,079 0,17

OVERALL DIMENSIONS PROTECTION CAPS FOR FIRG-A SERIES



TAPPO PER INNESTO MASCHIO
Cap of male half

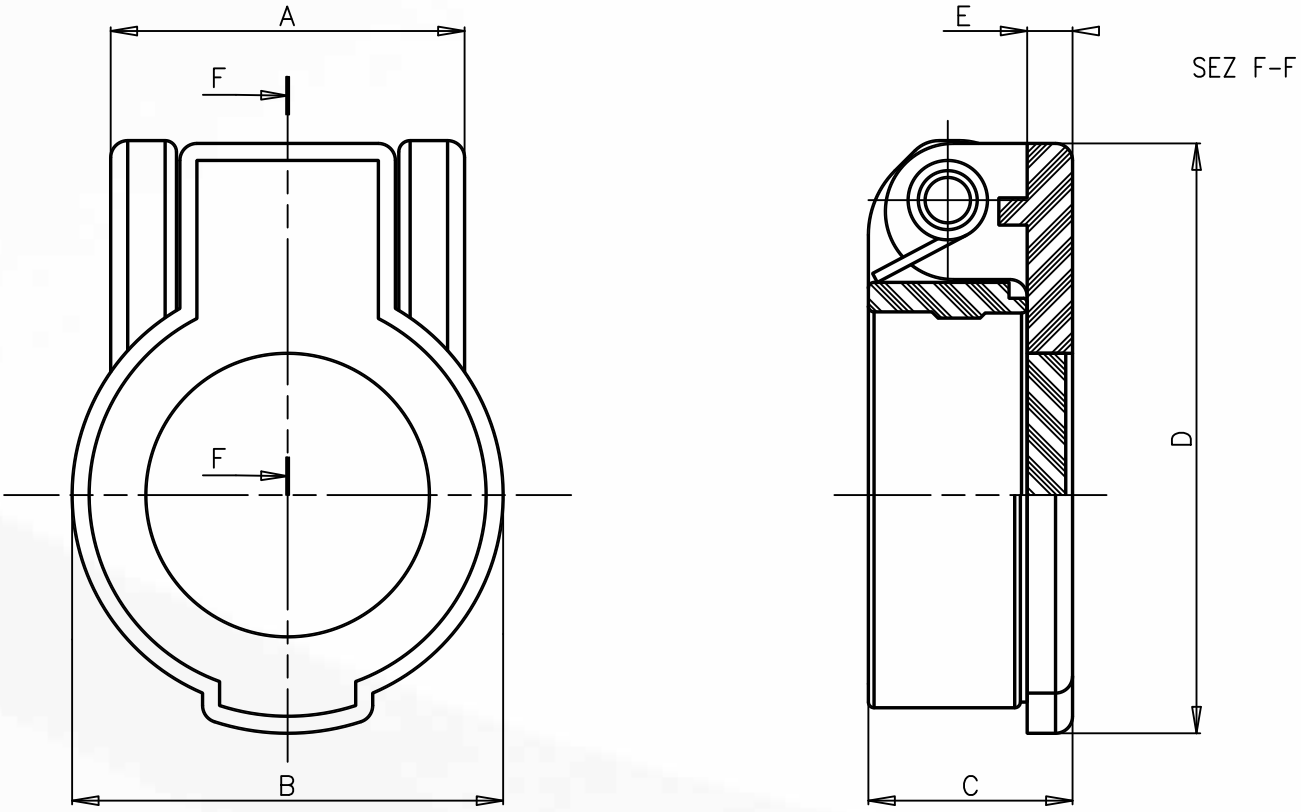


TAPPO PER INNESTO FEMMINA
Cap of female half

ALUMINUM CAPS
- Available in following colors: White and red.
- Temperature range: from -20 °C to +100 °C (from -4 °F to +212 °F).

Description	Coupling	Unit	A	B	C	D	E	F	G	H	Unit	Weight
-	F-A25	mm	80	41	370	51	-	-	-	-	Kg	0,220
		Inch	3,15	1,61	14,57	2,01	-	-	-	-	lb	0,49
-	M-A25	mm	-	-	-	-	60	46	360	51	Kg	0,180
		Inch	-	-	-	-	2,36	1,81	14,17	2,01	lb	0,40
-	F-FIRG112 F-A30	mm	95	50	380	58,5	-	-	-	-	Kg	0,355
		Inch	3,74	1,97	14,96	2,30	-	-	-	-	lb	0,78
-	M-FIRG112 M-A30	mm	-	-	-	-	70	50	368	58,5	Kg	0,205
		Inch	-	-	-	-	2,76	1,97	14,49	2,30	lb	0,45
-	F-FIRG200	mm	115	50	435	75	-	-	-	-	Kg	0,470
		Inch	4,53	1,97	17,13	2,95	-	-	-	-	lb	1,04
-	M-FIRG200	mm	-	-	-	-	85	62	420	75	Kg	0,305
		Inch	-	-	-	-	3,35	2,44	16,54	2,95	lb	0,67

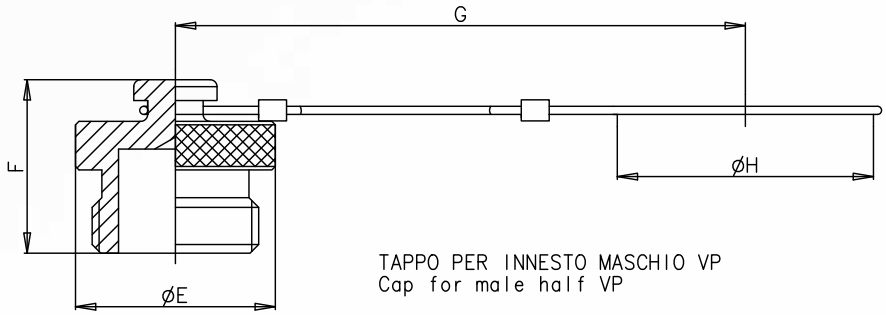
OVERALL DIMENSIONS PROTECTION CAPS FOR FIRG-A SERIES



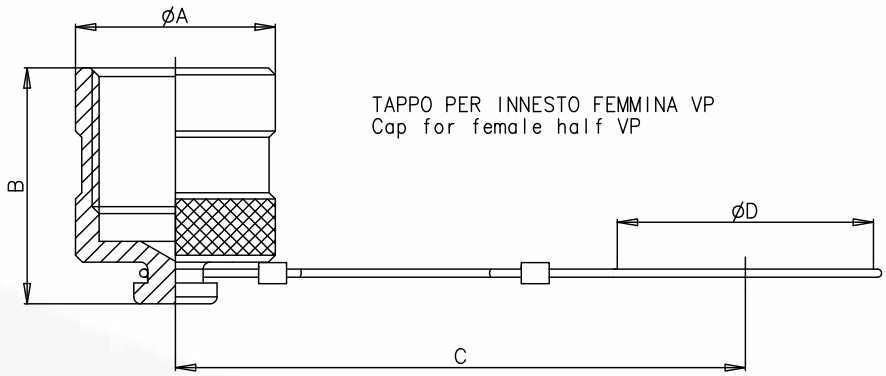
NYLON FLIP CAPS
- Available in following colors: Red, yellow, blue, black and green.
- Temperature range: from -20 °C to +100 °C (from -4 °F to +212 °F).

Description	Coupling	Unit	A	B	C	D	E	Unit	Weight
-	F-FIRG38-12 F-A9	mm Inch	31,5 1,24	38 1,50	18 0,71	52 2,05	4 0,16	Kg lb	0,018 0,04
-	F-FIRG12A-34 F-A13	mm Inch	31,5 1,24	46 1,81	18 0,71	60 2,36	4 0,16	Kg lb	0,023 0,05
-	F-FIRG34B F-A15	mm Inch	31,5 1,24	50 1,97	18 0,71	64 2,52	4 0,16	Kg lb	0,025 0,05
-	F-FIRG34A-100 F-A17	mm Inch	31,5 1,24	56 2,20	18 0,71	70 2,76	4 0,16	Kg lb	0,025 0,06

OVERALL DIMENSIONS PROTECTION CAPS FOR VP-P SERIES



TAPPO PER INNESTO MASCHIO VP
Cap for male half VP

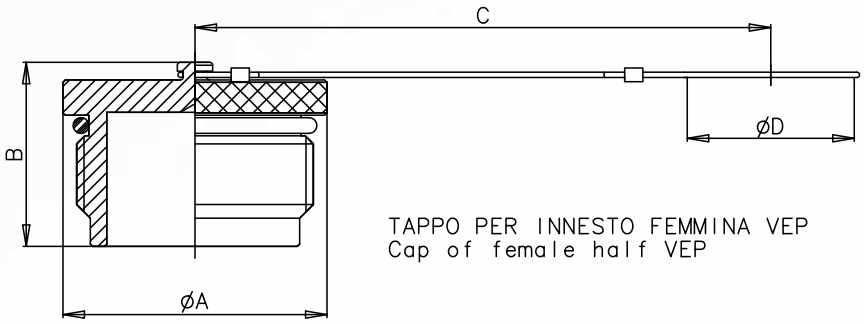


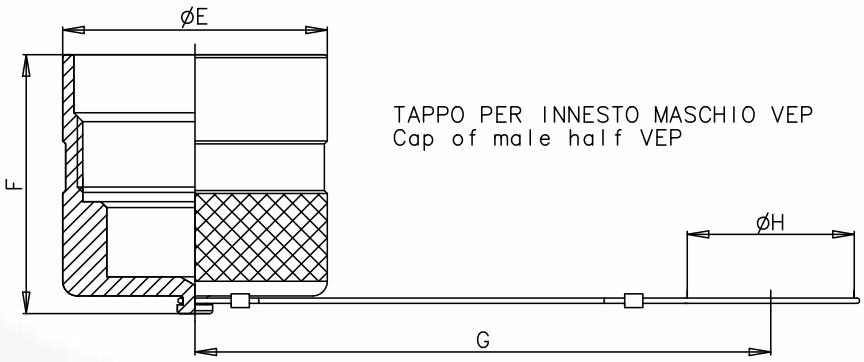
TAPPO PER INNESTO FEMMINA VP
Cap for female half VP

ALUMINUM CAPS
- Available in following colors: White and red.
- Temperature range: from -20 °C to +100 °C (from -4 °F to +212 °F).

Description	Coupling	Unit	A	B	C	D	E	F	G	H	Unit	Weight
-	F-VP7	mm	28,8	34	150	24	-	-	-	-	Kg	0,025
		Inch	1,13	1,34	5,91	0,94	-	-	-	-	lb	0,06
-	M-VP7	mm	-	-	-	-	28,8	25	150	24	Kg	0,020
		Inch	-	-	-	-	1,13	0,98	5,91	0,94	lb	0,04
-	F-VP9P	mm	32,8	37	170	24	-	-	-	-	Kg	0,035
		Inch	1,29	1,46	6,69	0,94	-	-	-	-	lb	0,08
-	M-VP9P	mm	-	-	-	-	32,8	25	170	24	Kg	0,025
		Inch	-	-	-	-	1,29	0,98	6,69	0,94	lb	0,06
-	F-VP13P	mm	41,8	43	210	33	-	-	-	-	Kg	0,065
		Inch	1,65	1,69	8,27	1,30	-	-	-	-	lb	0,14
-	M-VP13P	mm	-	-	-	-	40,8	32	210	33	Kg	0,045
		Inch	-	-	-	-	1,61	1,26	8,27	1,30	lb	0,10
-	F-VP15P	mm	44,8	43	210	36	-	-	-	-	Kg	0,060
		Inch	1,76	1,69	8,27	1,42	-	-	-	-	lb	0,13
-	M-VP15P	mm	-	-	-	-	43,8	32	210	36	Kg	0,055
		Inch	-	-	-	-	1,72	1,26	8,27	1,42	lb	0,12
-	F-VP17P	mm	51,8	48	240	41	-	-	-	-	Kg	0,090
		Inch	2,04	1,89	9,45	1,61	-	-	-	-	lb	0,20
-	M-VP17P	mm	-	-	-	-	50,7	32	240	41	Kg	0,075
		Inch	-	-	-	-	2,00	1,26	9,45	1,61	lb	0,17
-	F-VP21P	mm	61,8	51	270	51	-	-	-	-	Kg	0,115
		Inch	2,43	2,01	10,63	2,01	-	-	-	-	lb	0,25
-	M-VP21P	mm	-	-	-	-	61,2	34	270	51	Kg	0,130
		Inch	-	-	-	-	2,41	1,34	10,63	2,01	lb	0,29
-	F-VP30P	mm	78,8	65	340	57	-	-	-	-	Kg	0,210
		Inch	3,10	2,56	13,39	2,24	-	-	-	-	lb	0,46
-	M-VP30P	mm	-	-	-	-	79,3	42	340	57	Kg	0,215
		Inch	-	-	-	-	3,12	1,65	13,39	2,24	lb	0,47

OVERALL DIMENSIONS PROTECTION CAPS FOR VEP-P AND VEP-HD SERIES





ALUMINUM CAPS

- Available in following colors: White and red.

- Temperature range: from -20 °C to +100 °C (from -4 °F to +212 °F).

Description	Coupling	Unit	A	B	C	D	E	F	G	H	Unit	Weight
-	F-VEP7	mm	34,8	35,4	150	24	-	-	-	-	Kg	0,045
		Inch	1,37	1,39	5,91	0,94	-	-	-	-	lb	0,10
-	M-VEP7	mm	-	-	-	-	34,8	45	150	24	Kg	0,050
		Inch	-	-	-	-	1,37	1,77	5,91	0,94	lb	0,11
-	F-VEP9P	mm	37,8	36,6	170	24	-	-	-	-	Kg	0,055
		Inch	1,49	1,44	6,69	0,94	-	-	-	-	lb	0,12
-	M-VEP9P	mm	-	-	-	-	37,8	51,5	170	24	Kg	0,065
		Inch	-	-	-	-	1,49	2,03	6,69	0,94	lb	0,14
-	F-VEP13P	mm	45,8	40	210	33	-	-	-	-	Kg	0,075
		Inch	1,80	1,57	8,27	1,30	-	-	-	-	lb	0,17
-	M-VEP13P	mm	-	-	-	-	45,8	56,5	210	33	Kg	0,100
		Inch	-	-	-	-	1,80	2,22	8,27	1,30	lb	0,22
-	F-VEP15P	mm	49,8	43,6	210	36	-	-	-	-	Kg	0,110
		Inch	1,96	1,72	8,27	1,42	-	-	-	-	lb	0,24
-	M-VEP15P	mm	-	-	-	-	49,8	60	210	36	Kg	0,110
		Inch	-	-	-	-	1,96	2,36	8,27	1,42	lb	0,24
-	F-VEP17P F-VEP17HD	mm	54,8	49,3	240	41	-	-	-	-	Kg	0,150
		Inch	2,16	1,94	9,45	1,61	-	-	-	-	lb	0,33
-	M-VEP17P M-VEP17HD	mm	-	-	-	-	54,8	70	240	41	Kg	0,155
		Inch	-	-	-	-	2,16	2,76	9,45	1,61	lb	0,34
-	F-VEP21P F-VEP21HD	mm	64,5	53,4	270	51	-	-	-	-	Kg	0,230
		Inch	2,54	2,10	10,63	2,01	-	-	-	-	lb	0,51
-	M-VEP21P M-VEP21HD	mm	-	-	-	-	64,5	75	270	51	Kg	0,240
		Inch	-	-	-	-	2,54	2,95	10,63	2,01	lb	0,53
-	F-VEP30P F-VEP30HD	mm	89,8	62,6	340	57	-	-	-	-	Kg	0,415
		Inch	3,54	2,46	13,39	2,24	-	-	-	-	lb	0,91
-	M-VEP30P M-VEP30HD	mm	-	-	-	-	89,8	88	340	57	Kg	0,530
		Inch	-	-	-	-	3,54	3,46	13,39	2,24	lb	1,17
-	F-VEP45	mm	145	88	-	-	-	-	-	-	Kg	1,585
		Inch	5,71	3,46	-	-	-	-	-	-	lb	3,49
-	M-VEP45	mm	-	-	-	-	145	140	-	-	Kg	1,715
		Inch	-	-	-	-	5,71	5,51	-	-	lb	3,78

TECHNICAL FEATURES AND TERMS GLOSSARY

Interchangeability
Possibility of male coupling half or female coupling half to connect with the other brands of couplings.
Valve system
Type of valve used to shut-off medium flow from the male and female coupling half when disconnected.
Mechanical connection
Method or type of connection that creates retention between the male coupling half with female coupling half.
Size
Nominal size of coupling body.
ISO Size
Size indicated by ISO standard (the International Organization for Standardization) related to interchangeability of the couplings.
Rated flow
Typical rated flow relative to the size, in according with ISO 7241-2 standard.
Max. flow suggested
Max. flow suggested by Stucchi S.p.A.
Connect force
Value of force required to connect the couplings without residual pressure in the system.
Disconnect force
Value of force required to disconnect the couplings without residual pressure in the system.
Connect torque
Value of torque required to connect the couplings without residual pressure in the system.
Disconnect torque
Value of torque required to disconnect the couplings without residual pressure in the system.
Spillage
Indicative value of the fluid loss per couple - uncouple cycle without residual pressure. Checked on sample in according with ISO 7241-2 test method.
Max. operating pressure
The maximum peak of pressure which can be used the product.
Burst pressure
Value of pressure at which a coupling looses its ability to retain pressure.
Max. residual pressure during connection
Max. residual pressure trapped in the circuit where the coupler is allowed to connect.
Max. residual pressure during disconnection
Max. residual pressure trapped in the circuit where the coupler is allowed to disconnect.
Tightening torque
For screw couplings it is the torque value to which the male coupling half is to be connected with the female coupling half.
Coupled
Male coupling half connected with the female coupling half.
Male
Male coupling half uncoupled.
Female
Female coupling half uncoupled.
Temperature range
Temperature range which can be used the product.
Pressure drop
Pressure lost between the inlet and outlet of the coupling.
Brinelling
Markings of the locking balls on the metallic parts where they are in contact.

SEALS AND RELATIVE TEMPERATURE RANGE

Seal compound	Temperature range Celsius degrees °C	Temperature range Fahrenheit degrees °F
NBR (Nitrile)	-20 +100	-4 +212
VITON	-15 +180	+5 +356
EPDM (Ethylene Propylene)	-40 +150	-40 +302
KALREZ	-25 +300	-13 +572
HNBR	-30 +130	-22 +266
FLUOROSILICONE	-50 +150	-58 +302
SILICONE	-50 +150	-58 +302
NEOPRENE	-40 +100	-40 +212
PTFE (Teflon)	-50 +180	-58 +356

The above temperatures are indicative and can change due to the fluid used.
For the correct choice of the seal, we suggest you to consult the Stucchi customer service.

CONVERSION FACTORS FROM INTERNATIONAL SYSTEM (SI) TO ANGLO SAXON SYSTEM (USA)

Characteristics	International system SI	Anglo Saxon system USA	Trasformation from SI to USA	Trasformation from USA to SI
PRESSURE	Mega Pascal (MPa) 1 MPa = 10 bar	Pound/Square Inch (psi)	1 Mpa = 145psi	1 psi = 0,0069 Mpa
FLOW IN HYDRAULIC	Liter per minute (l/min)	Gallon per minute (GPM)	1 l/min = 0,265 GPM	1 GPM = 3,78 l/min
FORCE	Newton (N)	Pound force (lbf)	1 N = 0,225 lbf	1 lbf = 4,444 N
TORQUE	Newton meter (Nm)	Pound force x Foot (lbf ft)	1 Nm = 0,737 lbf ft	1 lbf ft = 1,357 Nm
TEMPERATURE	Celsius degree (°C)	Fahrenheit degree (°F)	°C = (°F-32)/1,8	°F = (°Cx1,8)+32
LENGTH	Millimeter (mm) Meter (m)	Inch (Inch) Foot (ft)	1mm = 0,03937 Inch 1 m = 3,28084 ft	1 Inch = 25,4 mm 1 ft = 0,3048 m
WEIGHT	Kilogram (kg)	Pound (lb)	1 Kg = 2,2046 lb	1 lb = 0,4536 Kg

NOTES

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