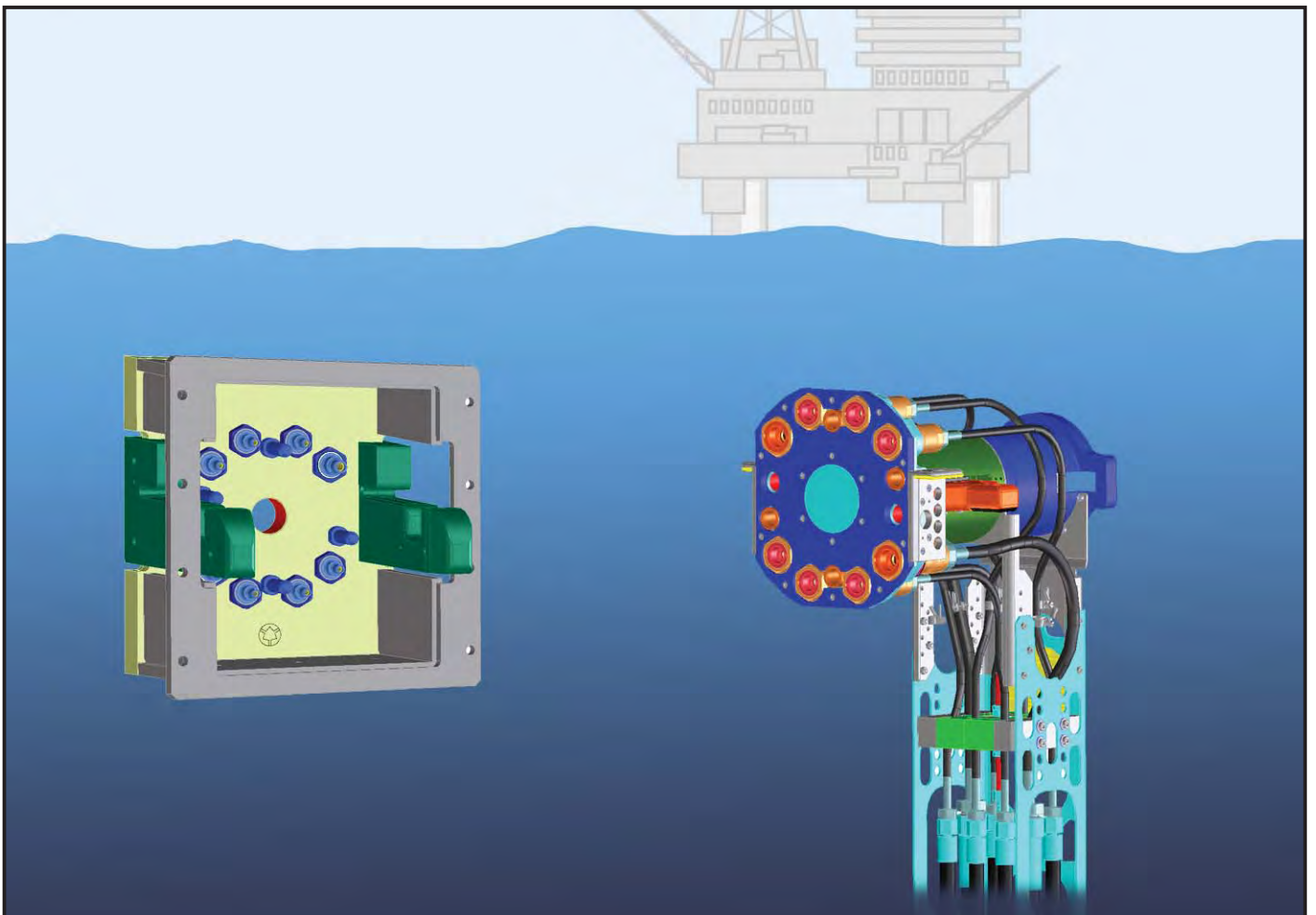


**Subsea
Technology
HFL Systems**

Type 91561



The design is based on two requirements, which are reliability and ease of use. For the implementation of these parameters, only proven technology and components were used. As a result, this system allows the customer to operate easier and quicker compared with existing systems.

The modularity of the approach ensures different versions without compromising the proven technology.

Key Features:

- Seawater depth up to 3.000 m.
- Operational interface for torque tool to ISO 13628-8 class 4.
- Normal operation torque 1.350 Nm (= max. setting of class 3).
- Emergency break away torque 2.700 Nm (= max. setting of class 4).
- Connection and disconnection at full working pressure possible (also emergency disconnection).
- Hose bundle built by coiled single hoses, wrapped and protected against mechanical damage by 5 mm thick high density polyethylene spiral.
- HFL bend radius min. 600 mm + 25% for dynamic movement. Central stainless steel wire for pull loads up to 5000 N.
- Hose bundle terminated in strain relief flange and single line clamping flange, coupling elements equipped with welded tubing, bent into position to meet single hoses torsion and torque free.

Project-related, Features:

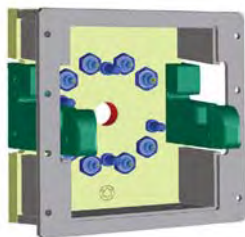
- Population of elements (up to 14 elements, see population table).
- Strain relief (according to customer requirements).
- Working pressure up to 69 MPa (10.000 psi), line sizes 1/4" – 1".
- Jumper length adapted to customer requirements.
- High collapse resistant hoses available (HCR).
- Umbilical with outer sheathing instead of hose bundle with spiral available .

Operation Sequence:

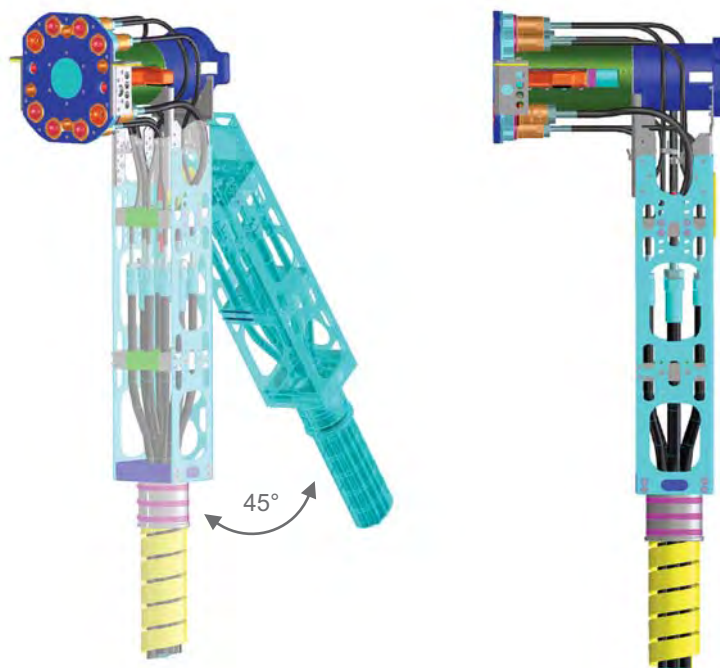
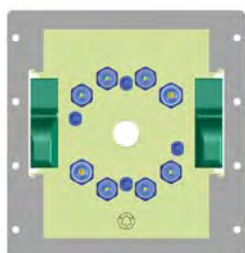
- Transport and placement of MQC free half by ROV to fixed half and dropping in position.
- Prepositioned unit is driven to connect by activation of rotary action of torque tool.
- The fine centring and mating of coupling elements is done without further action by the ROV operator.

Order nos. according to table 'Selection of Standard Populations', Example B:

91561-B-00004-AAAI-Y01	- HFL, 8 way, jumper length 5 metres, ROV stab plates on both ends (other lengths available)
91561-B-00007-AAAJ-Y01	- HFL, 8 way, jumper length 15 metres, ROV stab plate on one end (other lengths available)
91561-2-FT004-AAAE-Y01-AA	- Receptacle, tube tail termination
91561-0-LT004-AAAL-Y03-AA	- Simplified free half stab plate to test and flush receptacles
91561-2-FT004-AAAK-Y02-AA	- Simplified fixed half stab plate to test and flush HFL
91561-0-LT005-AAAN-Y04-AA	- Cross over free half (picture see on reverse)



Receptacle front view

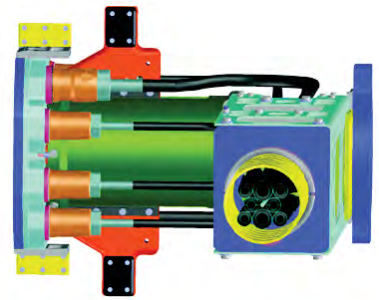


Hose Specifications:

Diameter	Working pressure WP [MPa, (PSI)]	Burst pressure WP [MPa, (PSI)]	Minimum Bend radius [mm]	Weight in Air [kg/m]	Core Material	Pressure Reinforcement	Cover
1/4"	69 (10.000)	350 (50.750)	150	0,31	Methanol washed PA 11	High strength wire	PA 12 black
3/8"	69 (10.000)	350 (50.750)	190	0,47			
1/2"	69 (10.000)	325 (47.125)	200	0,94			
3/4"	69 (10.000)	250 (3.625)	250	1,46			
1"	56 (8.120)	225 (3.262)	300	2,00			

Selection of Standard Populations

Line size	Example A [MPa, (PSI)]	Example B [MPa, (PSI)]	Example C [MPa, (PSI)]
1/4"		—————	
3/8"	12 x 69 (10.000)	—————	6 x 69 (10,000)
1/2"	2 x 69 (10.000)	2 x 69 (10.000)	1 x 69 (10,000)
1/2"		4 x 34,5 (5.000)	2 x 34,5 (5,000)
3/4"	—————	2 x 69 (10.000)	2 x 69 (10,000)
1"	—————	—————	1 x 34,5 (5,000)
Total	14 way	8 way	12 way



Population - Determination: $F_{P (max. allowed)*} = 142 \text{ kN} > F_{P (specific)}$

$$F_{P (specific)} [\text{kN}] = \sum_{\text{Elements}} S_{\text{Element}} [\text{mm}^2] \cdot WP_{\text{Element}} [\text{MPa}]$$

* Other $F_{P (max. allowed)}$ available on request

Elements	Suitable for line size	Working pressure WP_{Pmax} [MPa, (PSI)]	Surface S [mm ²]
OM-006	1/4"; 3/8"	69 (10.000)	90
OM-010	1/2"	69 (10.000)	215
OM-016	3/4"; 1"	56 (8.120)	435

Conversion: 145 psi = 1 MPa = 10 bar

Geometrical restraints might apply! Please use our service for a feasibility check.

Materials:

Stainless steel 1.4404 (AISI 316L) and similar, high corrosion and sea water resistant
Bronze 2.0966.97

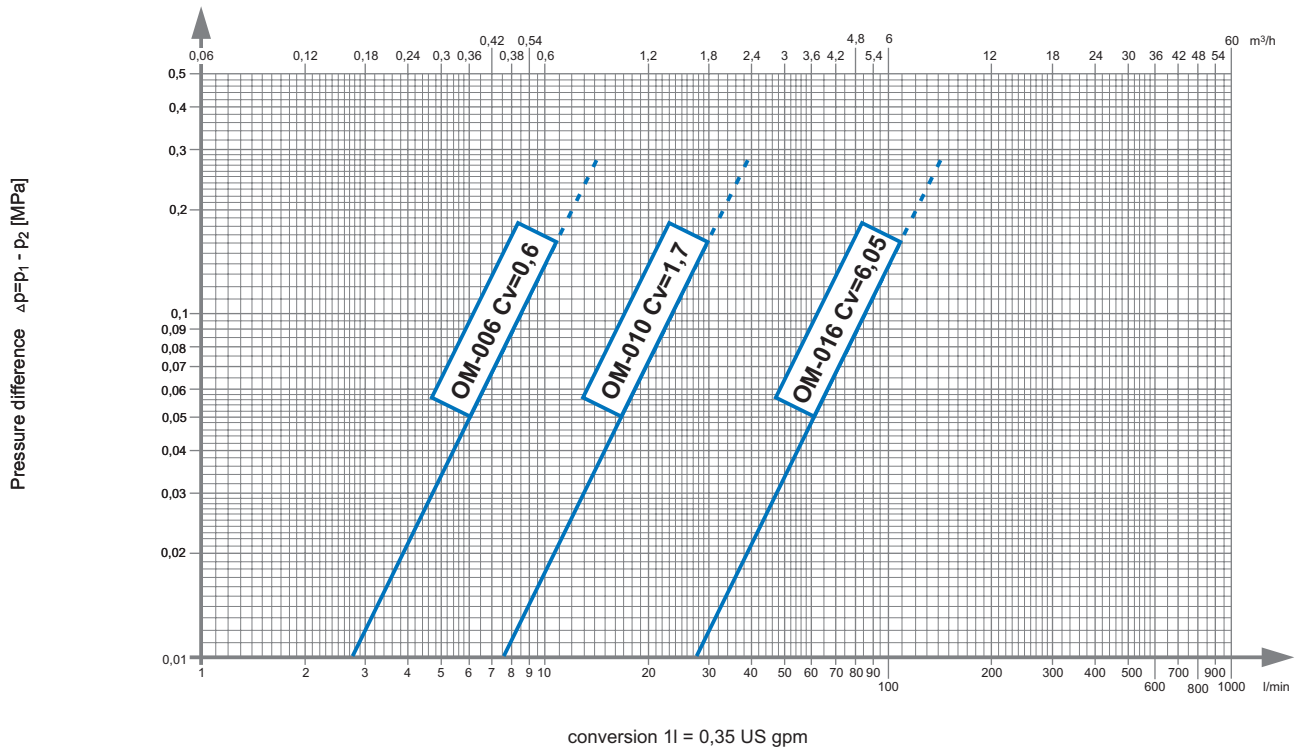
Primary seals: PEEK
 Back up and secondary seals: FKM for hydraulic service.
 FFKM for chemical injection / methanol service.
 The seal technology of Walther coupling elements allows
 > 100 connection cycles without seal exchange.



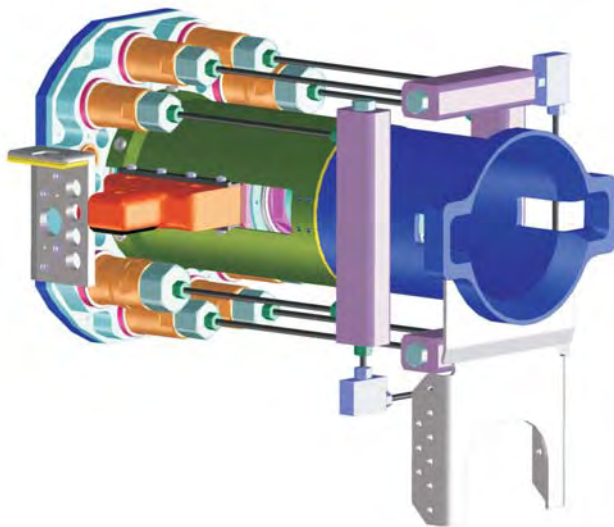
HCR versions are available, too.

Performance diagramme / sealing on both sides

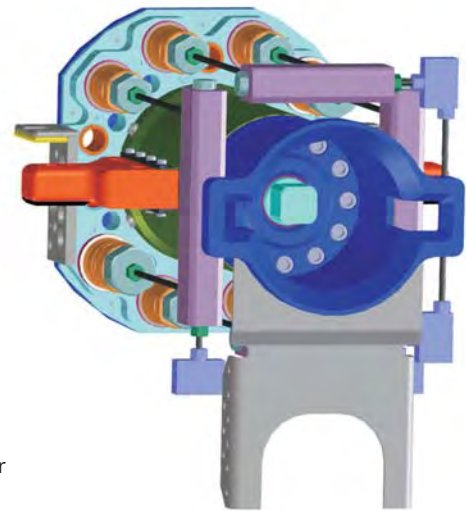
Flow rates Cv: test acc. to DIN IEC 534 with water at 20 °C



WALTHER-PRÄZISION • Wika rev. 01/2010 • subject to alterations



Cross over



WALTHER-PRÄZISION Carl Kurt Walther GmbH & Co. KG

Hausadresse / Head office:
Westfalenstraße 2
42781 Haan, Germany
Telefon: +49 (0) 21 29 567-0
Telefax: +49 (0) 21 29 567-450

Postadresse / Postal address:
Postfach 420444
42404 Haan, Germany
eMail: info@walther-praezision.de
Internet: www.walther-praezision.de



Choose the Original
Choose Success!



walther
präzision