



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **P-14830**

This is to certify that the  
**Pipe Couplings, Bite and Compression Type**

with type designation(s)

**ES-V, W-V, GS-V, T-V, G-V, WS-V, K-V, WE-V, GE-V, TE-V, LE-V, TR-V, EG-V, EW-V, ET-V, EL-V, MA-V, MA-EV, MA-VD, EW-VD, ET-VD, EL-VD, EG-VD, KOR-V, RED-V, GAS-V, GAI-V, GR-V, ETH-V, EWH-V, GDVV, GEDVV, DGWSV and DGWESV**

Issued to

**Volz Gruppe GmbH**  
**Deilingen, Germany**

is found to comply with

**Det Norske Veritas' Rules for Classification of Ships**  
**Det Norske Veritas' Standards for Certification 2.9 No. 5-792.20**

Application

**May be used for: Hydraulic- and lubrication oil, fuel oil, compressed air, oxygen (see cert.), steam and condensate, fresh- and sea water**

**Temperature range: (See cert.)**  
**Max. working press.: 100 to 800 bar (See cert.)**  
**Sizes: Tube O.D 4 to 42 mm**

This Certificate is valid until **2017-06-30**.

Issued at **Høvik** on **2014-04-09**

DNV local station: **Essen Business Support**

Approval Engineer: **Mohsen Mohebbi**

for **Det Norske Veritas AS**

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**Marianne Spæren Marveng**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

## Product description

Cutting ring pipe couplings acc. to DIN 2353. O-ring on stud ends for some types.

### Materials:

Carbon steel: C15, C22, C35, St.37-0, St.37-2 and 9SMnPb28K acc. to DIN 3859

ESV	Welding bulkhead	MA-EV	Adjustable manometer coupling
W-V	Equal elbow	MA-VD	Adjustable manometer coupling
GS-V	Threaded bulkhead	EW-VD	Adjustable W-coupling
T-V	Equal tee	ET-VD	Adjustable T-coupling
G-V	Straight coupling	EL-VD	Adjustable L-coupling
WS-V	Bulkhead elbow	EG-VD	Standpipe adaptor
K-V	Equal cross	KOR-V	Reducing standpipe
WE-V	Male stud elbow	RED-V	Reducing standpipe
GE-V	Male stud straight	GAS-V	Straight welding coupling
TE-V	Male stud branch tee	GAI-V	Straight female adaptor
LE-V	Male stud barrel tee	GR-V	Straight reducing
TR-V	Male stud branch tee	ETH-V	Adjustable T-swivel
EG-V	Standpipe adaptor	EWH-V	Adjustable W-swivel
EW-V	Adjustable barrel tee	GDVV	Swivel coupling
ET-V	Adjustable barrel tee	GEDVV	Swivel coupling
EL-V	Adjustable barrel tee	DGWSV	Swivel coupling
MA-V	Manometer coupling	DGWESV	Swivel coupling

Adaptors available with conical or cylindrical thread.

## Application/Limitation

Normal working pressures defined at 20°C:

Product line	Tube O.D. (mm)	Pressure (Bar)
LL	4 – 8	100
L	6 - 10	500
	12 – 18	400
	22 – 42	250
S	6 – 10	800
	12 – 16	630
	20 - 38	420

At elevated temperatures, the maximum pressures are to be reduced according to following:

Temperature	20° C	50° C	100° C	150° C	200° C	250° C	300° C	400° C	450° C
Carbon steels, unalloyed	1,00	1,00	1,00	0,89	0,81	0,72	0,65	0,59	0,54
Low alloyed steels	1,00	1,00	1,00	0,93	0,87	0,81	0,75	0,69	0,63

Temperature range depending on sealing ring materials:

FPM (Viton):	-25 to 200°C
PTFE (Teflon):	-60 to 200°C
NBR	-30 to 120°C

Coupling series L and S may be used for gases having an oxygen content exceeding 21% at working pressure 250 bar and 360 bar respectively.

Couplings used for low temperature gas may only be used for accessory lines and instrumentation lines with external diameters of 25 mm and less. DNV Rules Pt.5, Ch.5, Sec.6, C509

Threaded bulkhead couplings type GS-V and WS-V may not be used on watertight bulkheads.

Couplings with non-metallic components are not to be used for fire safe applications.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer.

Couplings made from carbon/carbon-manganese steel shall be heat treated according to DNV Rules Pt.2 Ch.2 Sec. 5 G300 when it is going to be installed in system with fluid temperature below 0° C.

Ferritic steel for low temperature services shall fulfill impact test requirement stated in DNV Rules Pt.2 Ch.2 Sec.5 Table G2

These couplings are not to be used on tubes in cold fabricated (hard temper) conditions.

The wall thickness and material of the tubes to be in accordance with the current Rules of Det Norske Veritas.

No product certificate will be required.

## **Type Approval documentation**

Reference documents:

- Manufacturer's catalogue
- Test witnessed by DNV, 1995-03-02
- DNV test report no. 95-1017, Oxygen shock test, 1995-02-23
- MPA NRW Prüfzeugnis Nr. 12 0016 0 95, 1994-12-19
- Test witnessed by DNV 2004-04-02, Pruf-Nr 04/020
- Test witnessed by DNV 2004-04-30, Pruf- Nr 04/020-1
- Retention Survey Report Date: 28,04,2008
- SZMF Test Report D 048/2008 Date: 12,03,2008
- Flextest test reports dated 2008-09-24
- Salzgitter Mannesmann Forschung test reports

## **Tests carried out**

Leakage, Burst Pressure, Vacuum test, Pull-Out, Repeated assembly test, Vibration, Pressure Pulsation Test, Oxygen shock test

## **Marking of product**

For traceability to this type approval, each coupling is at least to be marked with:

- Manufacturer's trade mark
- Type designation
- Size

## **Periodical assessment**

For retention of the Type Approval, a DNVGL Surveyor shall perform a survey - before the expiry date of this certificate - to verify that the conditions for the type approval are complied with. The Surveyor shall perform the following tasks on samples selected at random from stock or from the running production:

- Verify that the dimensions of the couplings comply with Type Approved documentation.
- Verify that the material composition complies with Type Approved documentation.
- Witness burst testing.

**END OF CERTIFICATE**