

Quick Disconnect Couplings  
Pull Type

08M-2011



## 1. General information, scope

Date:	23.08.2011	Title:	Product Bulletin QDV Pull Type 08M-2011
System:	Quick disconnect couplings Pull Type	Pages::	9
Customer:	All		
Part-no.:	All BP..... and BS....	Serial-Nr.:	none

## 2. Description and scope of application

The Quick Disconnect Couplings of the Pull Type series are compact and lightweight couplings, developed for hydraulic and pneumatic purposes in motor sport with operating pressure up to 200bar.

Both halves, coupler and nipple, are equipped with self-acting valves to avoid loss of fluid during uncoupling as well as air inclusion during coupling.

The locking mechanism is designed for one-hand operation; no separate actuation of the retaining sleeve is required for operation. To verify the correct connection, the female half (coupler) is equipped with a green indicator ring. This indicator ring can alternatively be replaced by a retaining clamp that can only be attached when the halves are coupled and eliminate the risk of unintentional uncoupling.

Additionally the whole operating mechanism is O-Ring-sealed to achieve a particular suitability for rough conditions and to reduce environmental effects.

Optionally the dry break coupling can be used as a security shut-off device, e.g. for fuel lines. For this purpose one half of the coupling is equipped with a lanyard to separate the halves in case of an accident. The unique design of the locking mechanism also allows to activate the separation by pulling the male half. So it is possible to install two inversely arranged couplings to avoid the risk of mistakes.

All body sizes of the Pull Type series Quick Disconnect Couplings are also available in a non-locking version, designed for the use in refill units. Please ask for additional information on couplings and refill units.

## 3. Seal materials, representative fluids

The standard sealing material is a modified fluorinated rubber compound (FPM, FKM, Viton), which is identified with the suffix "B". This new material is available in Quick Disconnect Couplings from SF Motorsporttechnik and also allows the use for fuel-alcohol mixtures, pure ethanol and vegetable oil (see separate elastomer data sheet). Other materials as nitrile rubber (NBR), Ethylene-Propylene-Dien-rubber (EPDM) are available on request.

The operating temperatures are the following, dependent upon sealing material:

Material	Chemical description	Operating temperatures	Representative fluids
FKM B	Fluorcarbon, mod.	-20°C to +200°C	Fuel, ethanol, vegetable oil
NBR	Nitril-Butadien	-25°C to +120°C	Oils, mineral greases
EPDM	Ethylen-Propylen-Dien	-50°C to +150°C	Break fluids

Each coupling half is laser-labelled with Part-Nr. and sealing material (see separate part number guide).

#### 4. Hydraulic ports

The hydraulic connection is unioned by male thread with a conical seal of 37° according to MS 33656 (standard) or MS 33657 (bulkhead version).

Size	Nominal diameter	Standard Threads	Optional Standard Threads
05	5mm	7/16-20 UNF (AN4)	9/16-18 UNF (AN6)
08	8mm	9/16-18 UNF (AN6)	3/4 -16 UNF (AN8)
11	11mm	3/4 -16 UNF (AN8)	7/8-14 UNF (AN10)
14	14mm	7/8-14 UNF (AN10)	1-1/16-12 UN (AN12)

→ Of course any other connector style can be realised on request.

#### 5. Tests and certifications

Pull Type Quick Disconnect Couplings were tested according to FIA regulations, technical list No. 5. The following characteristics are covered by this tests:

- Burst pressure, up to 600bar (dependent on the size)
- Zero leakage (external), tested with pressurised couplings
- Fluid loss while uncoupling and coupling at pressurised system
- Uncoupling and coupling force at pressurised system

All these tests were performed in both coupled and uncoupled condition and were passed without any restrictions. Several qualification tests according to MIL-G are in preparation.

#### 6. Recommendations

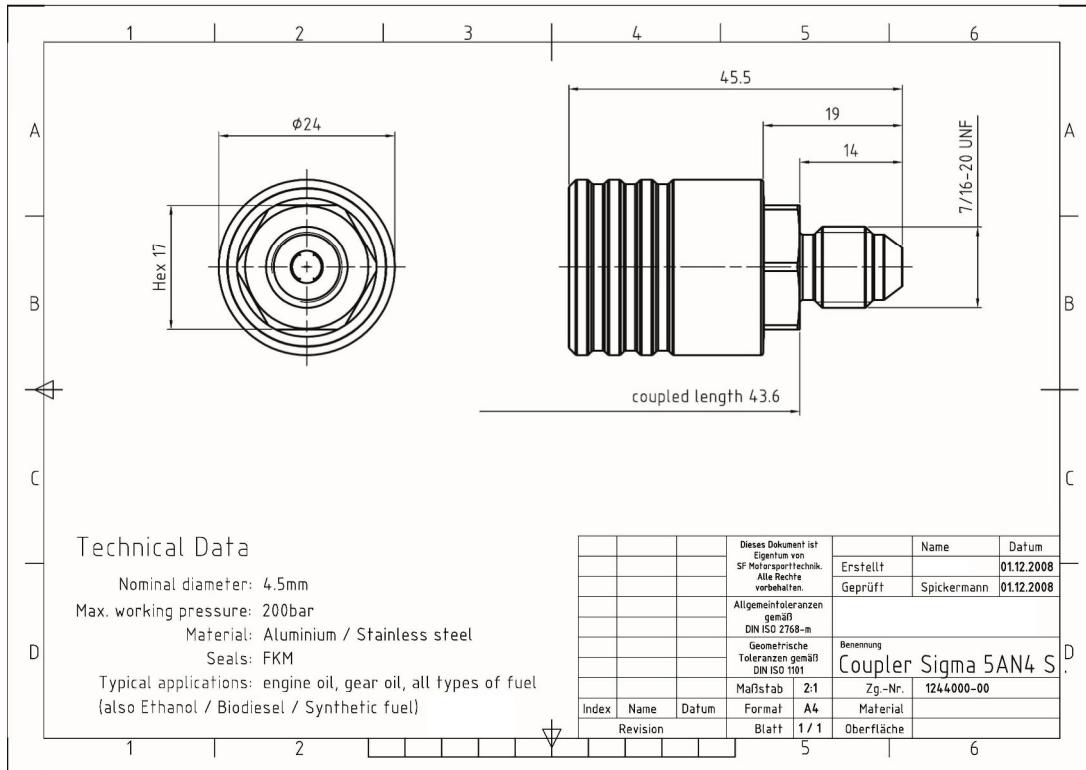
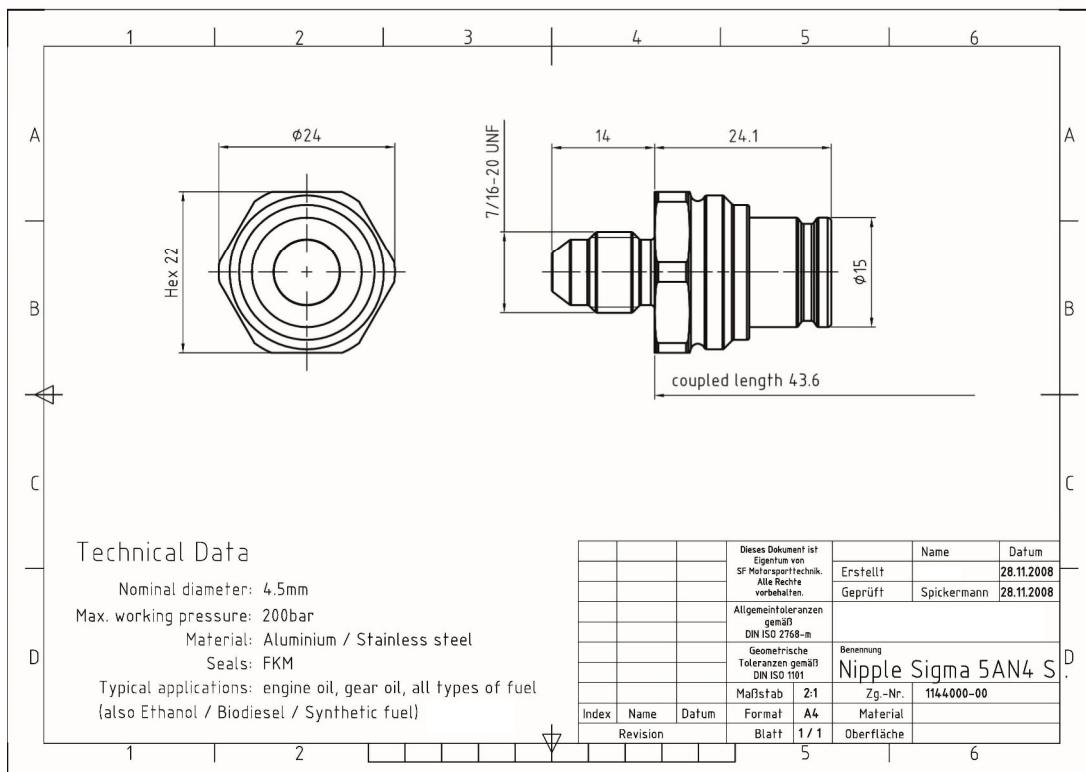
The Pull Type Quick Disconnect Couplings from SF Motorsporttechnik are manufactured only from high-strength materials with certification. All parts are produced to meet our highest requirements regarding tolerances and appearance. Each coupling is assembled and tested to strict specifications.

So these couplings of the Pull Type series are in use at several successful motorsport teams and in aerospace applications.

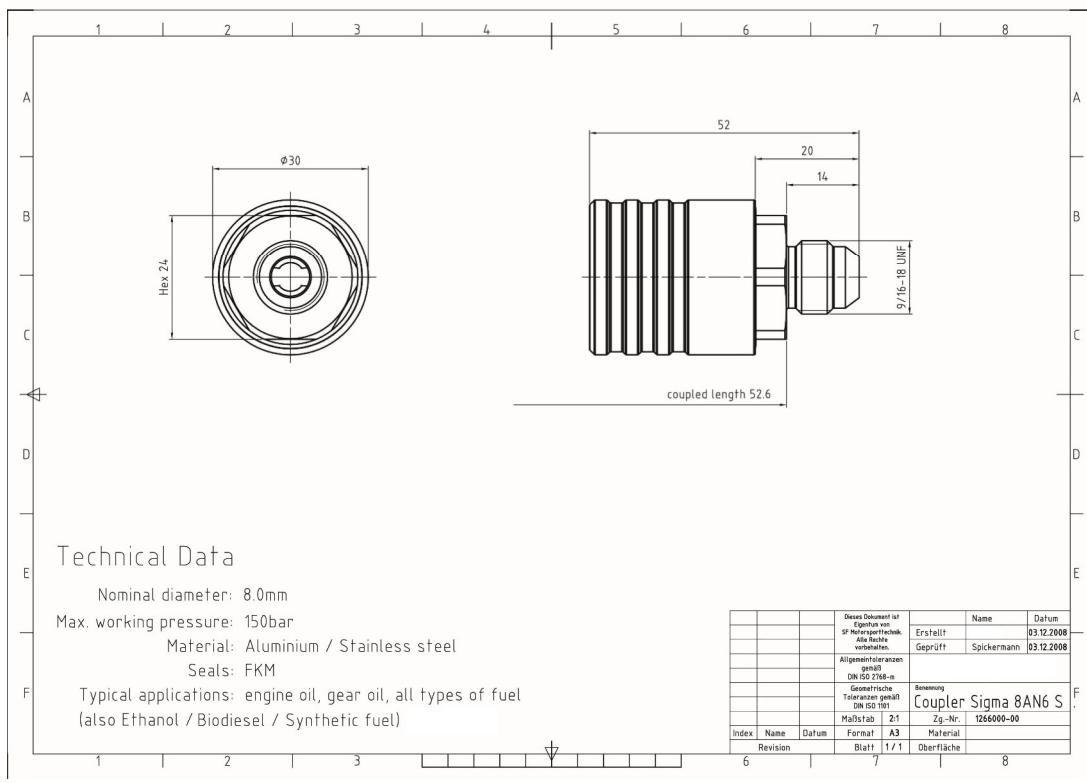
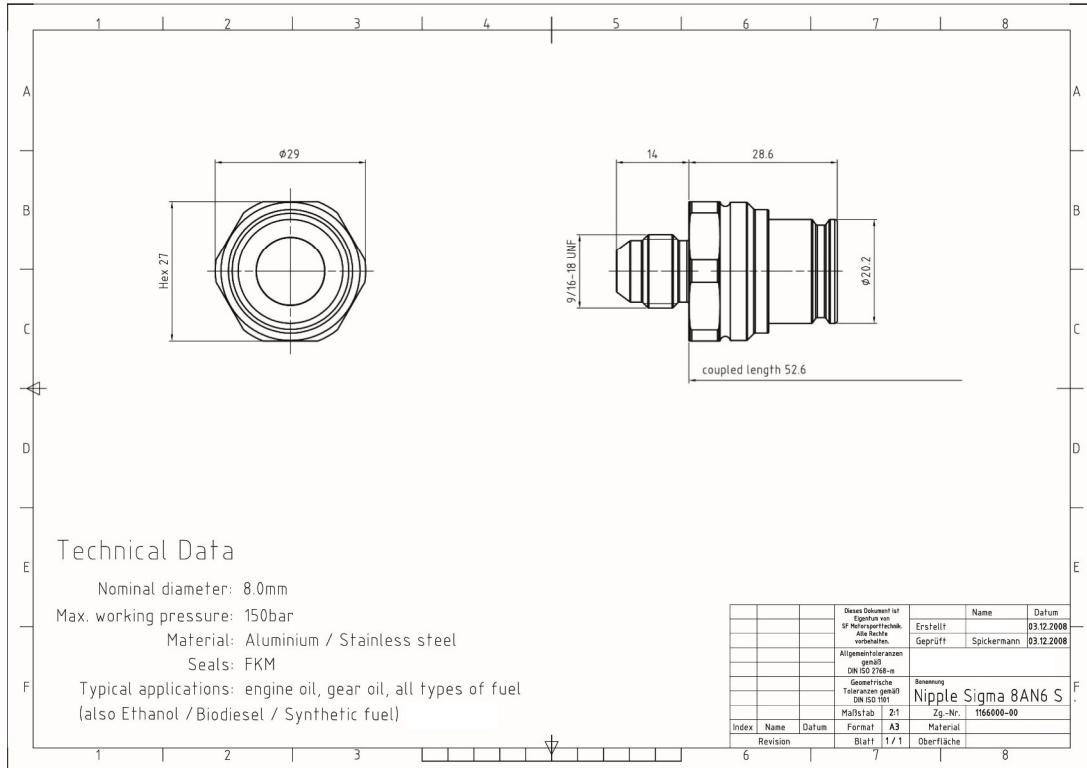
#### 7. Dimensions

Please notice that only one type of each size and half of the couplings is shown. Please ask for the datasheets for your required types.

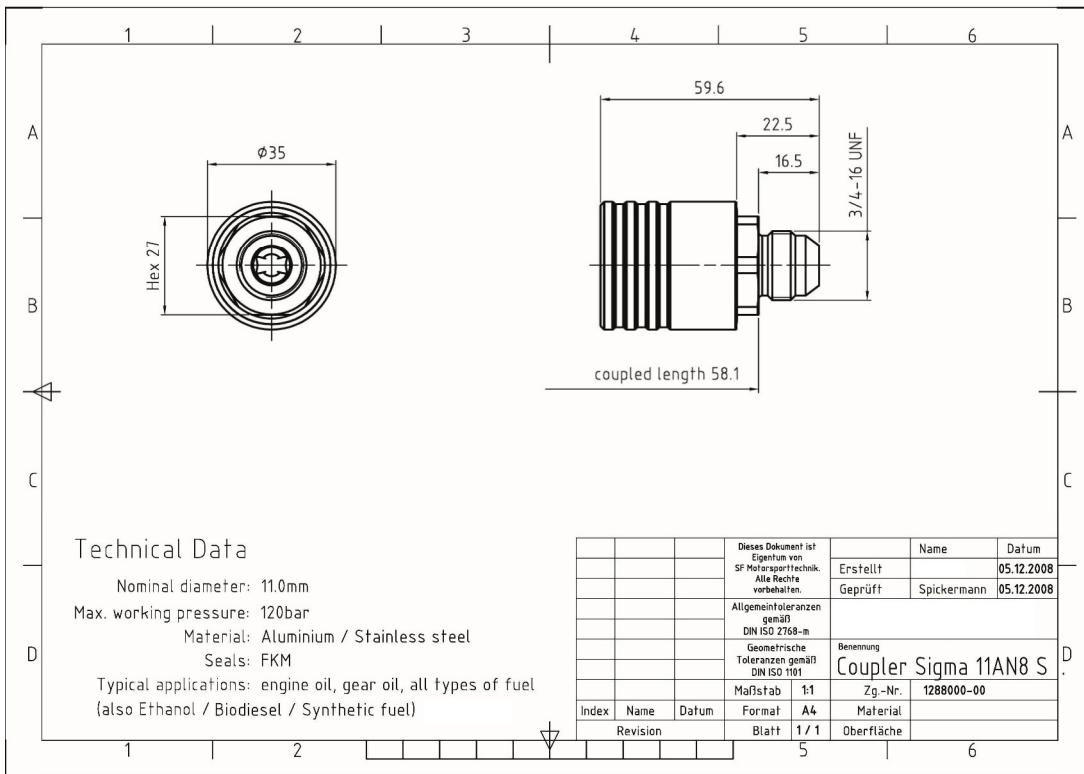
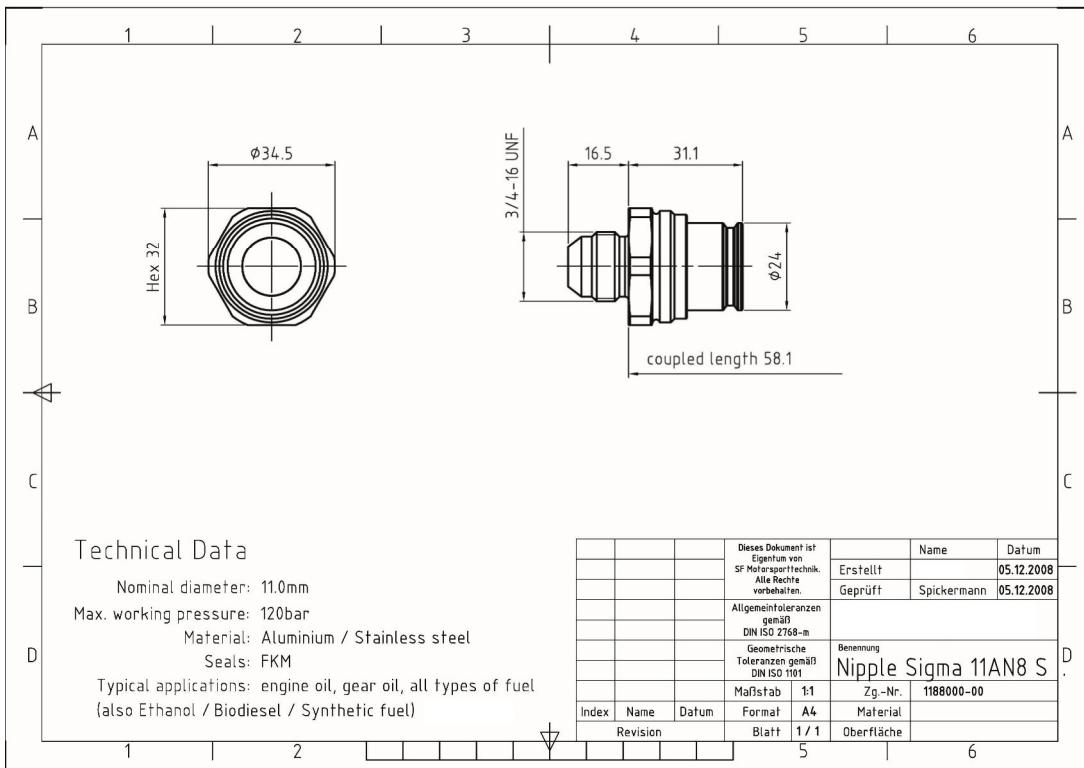
## 7. Dimensions (Conclusion)



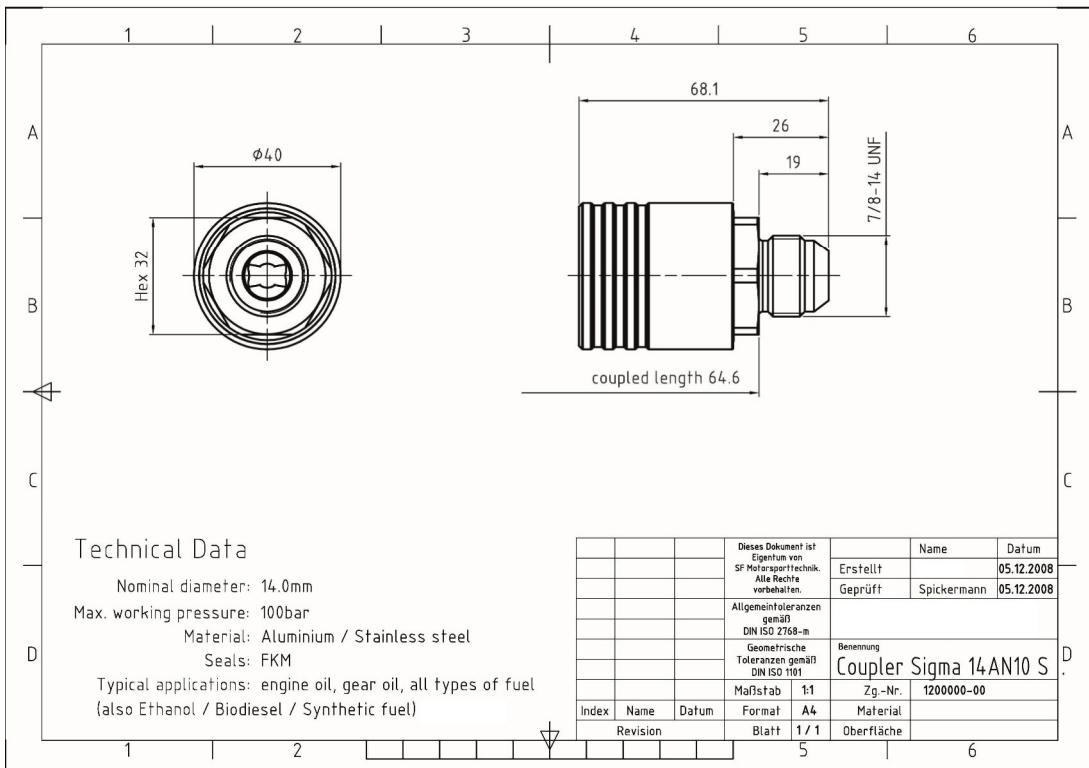
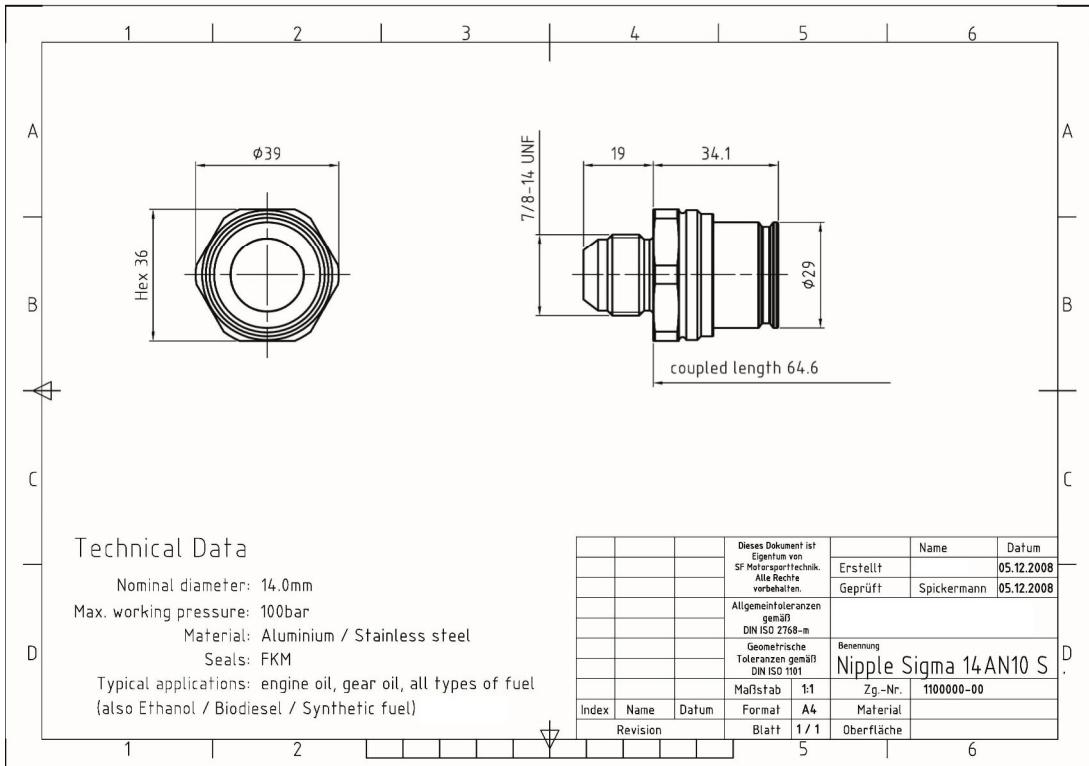
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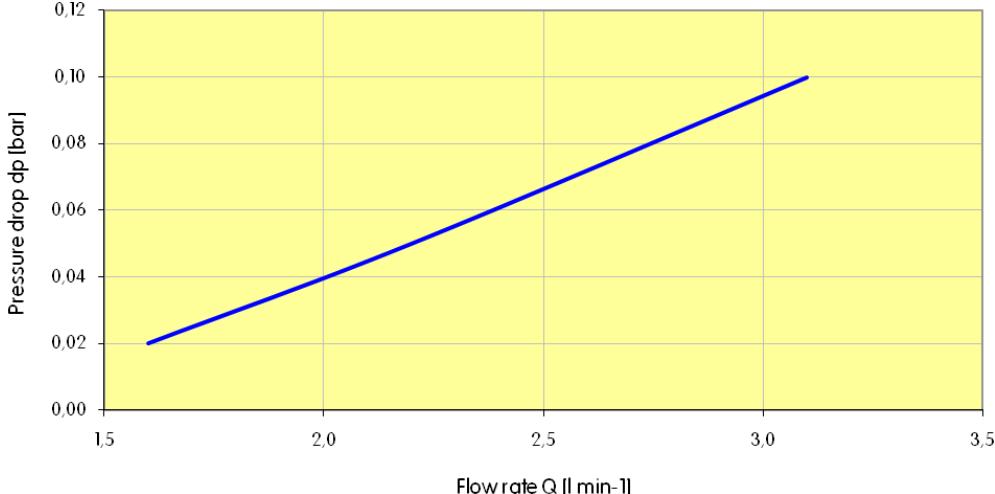
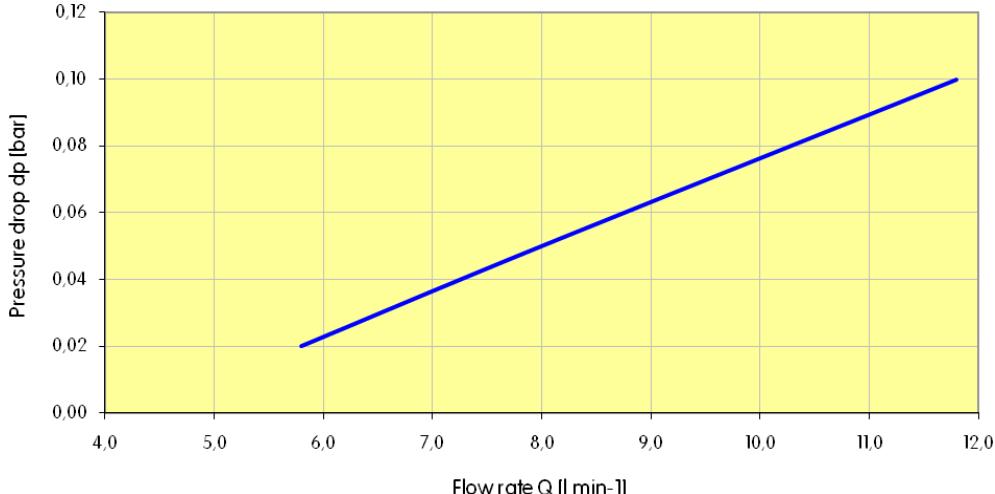
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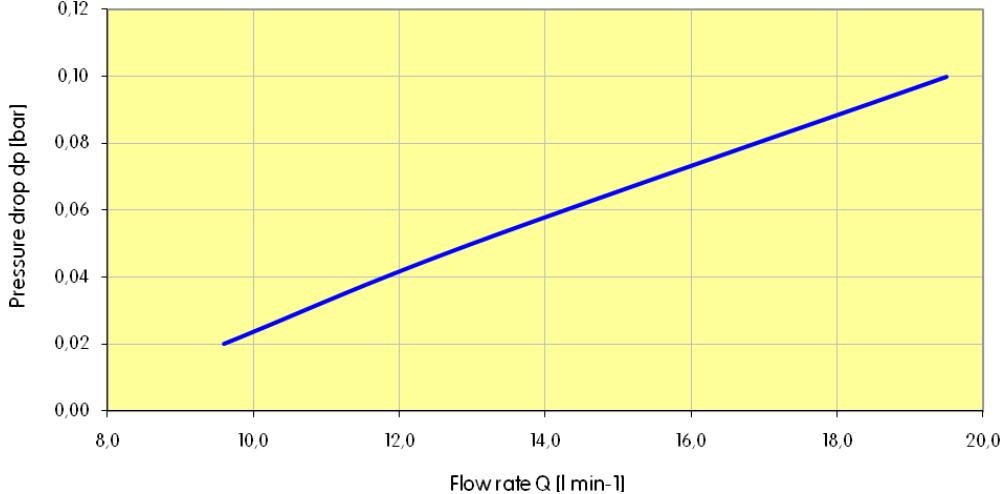
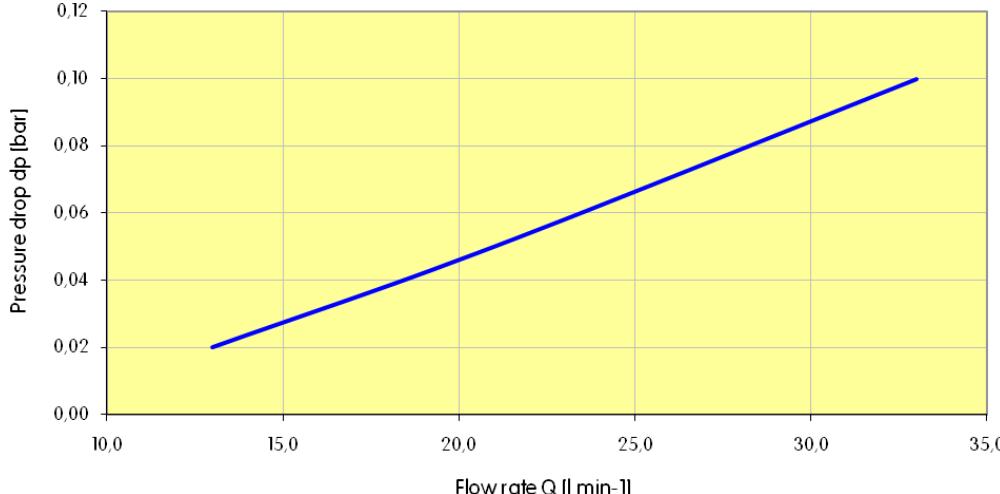
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## 8. Flow Data

Technical information	 <table border="1"> <caption>Pressure drop - Flow rate, QDV Pull Type NW5-AN4</caption> <thead> <tr> <th>Flow rate Q [l min⁻¹]</th> <th>Pressure drop dp [bar]</th> </tr> </thead> <tbody> <tr><td>1.5</td><td>0.02</td></tr> <tr><td>3.5</td><td>0.10</td></tr> </tbody> </table>	Flow rate Q [l min⁻¹]	Pressure drop dp [bar]	1.5	0.02	3.5	0.10	Product: <b>QDV Pull Type</b> Size - Thread: 05 – AN4 Coupler: PS05D04F Nipple: PP05D04F Flow direction: Coupler → Nipple Test fluid: Water Flow meter: PE 5 l - Kern 150 Pressure gauge: Suku NG160, Kl.0,6 Annotation: Cv = 0,70
Flow rate Q [l min⁻¹]	Pressure drop dp [bar]							
1.5	0.02							
3.5	0.10							
Date: 03.12.2008	Pressure drop - Flow rate, QDV Pull Type NW5-AN4	M. Spickermann						
Technical information	 <table border="1"> <caption>Pressure drop - Flow rate, QDV Pull Type NW8 – AN6</caption> <thead> <tr> <th>Flow rate Q [l min⁻¹]</th> <th>Pressure drop dp [bar]</th> </tr> </thead> <tbody> <tr><td>6.0</td><td>0.02</td></tr> <tr><td>12.0</td><td>0.10</td></tr> </tbody> </table>	Flow rate Q [l min⁻¹]	Pressure drop dp [bar]	6.0	0.02	12.0	0.10	Product: <b>QDV Pull Type</b> Size - Thread: 08 – AN6 Coupler: PS08D06F Nipple: PP08D06F Flow direction: Coupler → Nipple Test fluid: Water Flow meter: PE 10 l - Kern 150 Pressure gauge: Suku NG160, Kl.0,6 Annotation: Cv = 2,55
Flow rate Q [l min⁻¹]	Pressure drop dp [bar]							
6.0	0.02							
12.0	0.10							
Date: 03.12.2008	Pressure drop - Flow rate, QDV Pull Type NW8 – AN6	M. Spickermann						

## 8. Flow Data (Conclusion)

Technical information	 <table border="1"> <caption>Pressure drop - Flow rate, QDV Pull Type NW11 – AN8</caption> <thead> <tr> <th>Flow rate Q [l min⁻¹]</th> <th>Pressure drop dp [bar]</th> </tr> </thead> <tbody> <tr><td>9.5</td><td>0.02</td></tr> <tr><td>19.5</td><td>0.10</td></tr> </tbody> </table>	Flow rate Q [l min⁻¹]	Pressure drop dp [bar]	9.5	0.02	19.5	0.10	Product: <b>QDV Pull Type</b> Size - Thread 11 – AN8 Coupler: PS11D08F Nipple: PP11D08F Flow direction: Coupler → Nipple Test fluid: Water Flow meter: PE 10 l - Kern 150 Pressure gauge: Suku NG160, Kl.0,6 Annotation: Cv = 4,30
Flow rate Q [l min⁻¹]	Pressure drop dp [bar]							
9.5	0.02							
19.5	0.10							
Date: 03.12.2008	Pressure drop - Flow rate, QDV Pull Type NW11 – AN8	M. Spickermann						
Technical information	 <table border="1"> <caption>Pressure drop - Flow rate, QDV Pull Type NW14 – AN12</caption> <thead> <tr> <th>Flow rate Q [l min⁻¹]</th> <th>Pressure drop dp [bar]</th> </tr> </thead> <tbody> <tr><td>13.5</td><td>0.02</td></tr> <tr><td>34.5</td><td>0.10</td></tr> </tbody> </table>	Flow rate Q [l min⁻¹]	Pressure drop dp [bar]	13.5	0.02	34.5	0.10	Product: <b>QDV Sigma</b> Size - Thread 14 – AN12 Coupler: PS14D12F Nipple: PP14D12F Flow direction: Coupler → Nipple Test fluid: Water Flow meter: PE 20 l - Kern 150 Pressure gauge: Suku NG160, Kl.0,6 Annotation: Cv = 7,10
Flow rate Q [l min⁻¹]	Pressure drop dp [bar]							
13.5	0.02							
34.5	0.10							
Date: 03.12.2008	Pressure drop - Flow rate, QDV Pull Type NW14 – AN12	M. Spickermann						