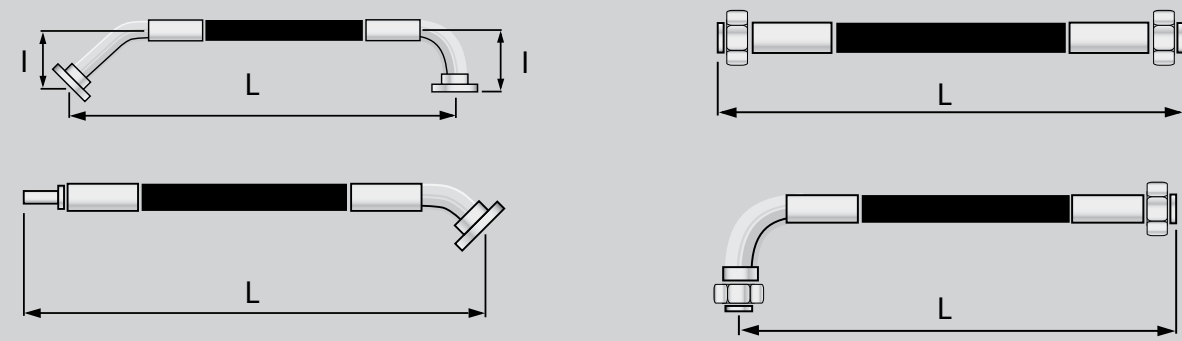


Determination of hose assembly length

Hose assembly length (DIN 20066)



Avoid stand pipe fittings in new designs. L = Hose assembly length, I = Leg length

$L = l_k \cdot [1 + (Z_1 + Z_2)]$ [mm]
 L = Hose assembly length taking into account essential sagging [mm]
 l_k = Design dimension [mm]; Dimension between fixed connectors and connectors directly opposite (sealing head, threaded pin, flange collar)
 Z_1 = Numerical value for essential axial flexibility, e. g., 5% = 0.05
 Z_2 = Numerical value for change in length, e. g., 2% = 0.02 for shortening

Hose shortening due to pressure

Numerical values Z_2 for calculation

Hose type	DN-independent
1 SN/1ST/1SC	0.04
2 SN/2ST/2SC	0.04
4 SP/4SH	0.04
SAE 100 R12, R13, R15	0.02
AF/BF	0.01
NY100	0.04
NY800	0.03

The numerical value Z_2 equals a maximum shortening on reaching the perm. operating pressure.

Example of calculation – Determining hose assembly length

Hose assembly length = Design dimension · [1 + (0.05 + 0.02)]
 axial flexibility ——— value dependent on hose type and DN

Example values used

Hose assembly length = $2500 \cdot [1 + (0.05 + 0.02)] = 2500 \cdot [1 + 0.07] = 2500 \cdot 1.07 = \underline{2675 \text{ mm}}$

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Visual inspections of hose assemblies

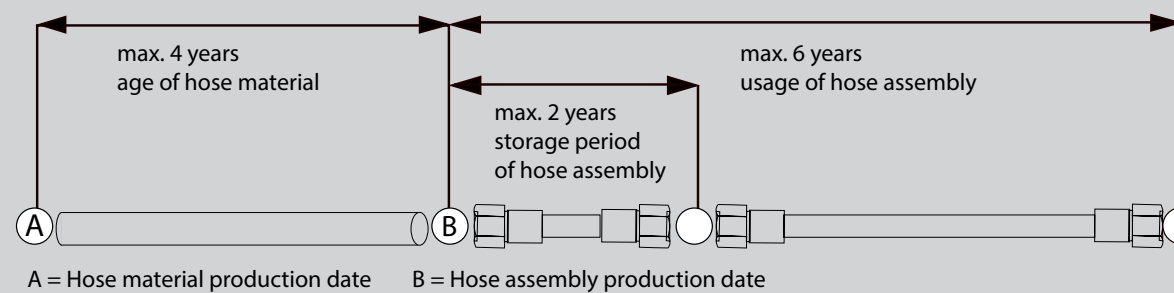
Replacement of hose assemblies (DIN 20066, paragraph 14.2)

Hose assemblies must be replaced if they fulfil the following criteria as determined by a visual inspection

- Damage to the outer layer up to the inner braiding
- Brittleness of outer layer or crack formation
- Change in the natural shape of the hose
- Hose fitting damaged or misshapen
- Hose becomes detached from the fitting
- Fitting tightness and function impaired by corrosion
- Installation requirements not complied with
- Maximum period of storage and use is exceeded (Check labels. Hose assemblies shall not be painted. Violation of identification requirement! (BGR 237))
- Leaks

A repair of the hose assembly involving the continued use of the installed hose and/or fitting (integration area) is not permitted.

Recommended period of storage and use (DIN 20066, paragraph 14.1.2)



Criteria for selecting a hose

- Resistance to pressure fluids due to loads from "inside" and "outside"
- Thermal resistance
- Pressure resistance and absorption of "external" force
- Change in length and external diameter
- Minimum bending radius
- Weight
- Abrasion characteristics
- Availability through standardisation and state of the art
- Approvals

Storage of hose assemblies/ hoses (DIN 7716)

- Store in a dry, cool and low-dust environment (rel. humidity below 65%)
- Do not expose to direct sunlight or UV radiation
- Shield from heat sources (storage temperature +12° C to +25° C)
- Do not store together with solvents, fuels or lubricants
- Store flat and under no stress
- Protect against ozone

Risk analysis (DIN EN ISO 4413:2011-04)

- No danger to the energy supply (routing hydraulic hose assemblies and electricity supply lines together is questionable)
- Requirements imposed by installation site, transport, maintenance
- Design adequate to sustain specified pressures
- Temperature limit values not exceeded
- Prevention of leaks
- Service and inspection capabilities
- Check of mechanical movement
- Contact protection for hot surfaces
- Reliability of components

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Quick reference

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Quick reference



