Seamless Pipe Reducers

Concentric and eccentric – for industrial piping systems with changing nominal sizes

Types: Concentric (CR) · Eccentric (ER)

Standards: EN 10253-2/-4 · ASME B16.9 · MSS SP-75

Materials: Carbon steel · low-temp steel · CrMo creep-resistant · P91/P92 · stainless 304L/316L/321/347/316Ti/904L/6Mo · duplex · super duplex · nickel-based · CuNi

Test certificates: EN 10204 type 3.1 / 3.2 · NDT on request · external inspection available

Certifications: ISO 9001 · AD 2000 · ISO 19443 (nuclear)

1 Applications

Reducers connect pipe sections of different nominal sizes and are found in almost every industrial piping system. The choice between concentric and eccentric design depends on flow and structural requirements.

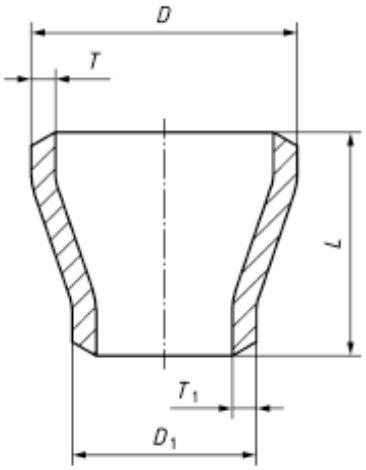
- ✓ **Power plants & energy**
  Pressure transitions, high-temperature systems
- ✓ **Chemical industry & refineries**
  Media separation, flow optimisation, corrosive media
- ✓ **General plant engineering**
  Flexible nominal-size adjustment within a piping run
- ✓ **Nuclear**
  Qualified supply chain per ISO 19443

2 Concentric vs. Eccentric – When to Use Which

Selecting the correct design is critical for the function and operating reliability of the plant.

Criterion	Concentric (CR)	Eccentric (ER)
Centre axis	Pipe axes aligned – no offset	Pipe axes offset – one side flat (flat on top/bottom)
Typical application	Vertical piping, symmetrical flow	Horizontal piping, pump suction lines
Advantage	Simpler manufacture, lower cost	Avoids air pockets (flat on top) or condensate accumulation (flat on bottom)
Standard designation (ASME)	Concentric reducer	Eccentric reducer

Note: if no type is specified in the inquiry, we deliver concentric (CR) as standard. Please state the type explicitly when ordering.



3 Manufacturing & Quality Assurance

Reducers are manufactured by necking down (concentric) or pressing / die forging (eccentric) from seamless or welded pipe material. Subsequent heat treatment and machining are performed in line with the material grade.

- ✓ **Uniform wall thickness**
  Controlled forming ensures material integrity in the transition area
- ✓ **Dimensionally accurate transition length**
  Tightly toleranced per standard or drawing
- ✓ **Full traceability**
  Continuous documentation, EN 10204 inspection certificates
- ✓ **Custom production**
  Custom lengths, transition angles, project specifications on request

4 Materials

EN materials	ASTM / ASME materials
P235GH (1.0345) · P265GH (1.0425)	A/SA 234 WPA · WPB · WPC
P355N (1.0562) · P355NH (1.0565)	A/SA 420 WPL6
L360NE (EN ISO 3183)	A/SA 420 WPL6 · API 5L L360
16Mo3 (1.5415)	A/SA 234 WP1
13CrMo4-5 (1.7335) · 10CrMo9-10 (1.7380)	A/SA 234 WP12 · WP22
X10CrMoVNb9-1 – P91 (1.4903)	A/SA 234 WP91
X11CrMoWVNb9-1-1 – P92 (1.4901)	A/SA 234 WP92
X2CrNi18-9 – 304L (1.4306 / 1.4307)	A/SA 403 WP304L
X2CrNiMo17-12-2 – 316L (1.4404)	A/SA 403 WP316L
X5CrNiMo17-12-2 – 316 (1.4401)	A/SA 403 WP316

EN materials	ASTM / ASME materials
X6CrNiTi18-10 – 321 (1.4541)	A/SA 403 WP321
X6CrNiNb18-10 – 347 (1.4550)	A/SA 403 WP347
X6CrNiMoTi17-12-2 – 316Ti (1.4571)	A/SA 403 WP316Ti
X1NiCrMoCu25-20-5 – 904L (1.4539)	A/SA 403 WP904L
X1NiCrMoCuN25-20-7 – 6Mo (1.4529)	A/SA 403 WP926 (6Mo)
X2CrNiMoN22-5-3 – Duplex 2205 (1.4462)	A/SA 815 S31803
X2CrNiMoN25-7-4 – Super Duplex 2507 (1.4410)	A/SA 815 S32750
NiCr22Mo9Nb – Alloy 625 (2.4856)	SB-366 WPN625
CuNi10Fe1Mn – CuNi 90/10 (2.0872)	SB-467 C70600

Special materials & high-performance alloys

- Super Duplex (e.g. 1.4410 / S32750)
- Nickel-based alloys: Inconel, Hastelloy, Monel
- Copper-nickel alloys (CuNi 90/10, 70/30)
- Further project-specific materials on request

5 Standards & Codes

EN 10253-2/-4: Butt-welding pipe fittings made of steel

ASME B16.9: Factory-Made Wrought Buttwelding Fittings

MSS SP-75: High-Strength Wrought Butt-Welding Fittings

2014/68/EU (PED): Pressure Equipment Directive · AD 2000 code

Manufacturing in accordance with the AD 2000 code as well as project-specific specifications or technical drawings on request.

6 Quality & Documentation

Certified to DIN EN ISO 9001, AD 2000 and ISO 19443. Every delivery is fully inspected and documented.

Standard inspection

- Visual inspection
- Dimensional checks
- Material certificate 3.1

Extended inspection

- NDT (RT, UT, PT, MT)
- PMI analysis
- Material testing

External acceptance

- TÜV / SGS / DNV / Lloyd's
- Certificate EN 10204 type 3.2
- Customer-specific inspection

7 Nirotec as Project Supplier

We supply reducers as a stand-alone component or as part of a complete fittings list – together with elbows, tees, caps and flanges, from a single source and with uniform documentation.

Your benefit: One contact for all pipe fittings within your project – no coordination effort between multiple suppliers.

8 Inquiry & Contact

For a project-specific inquiry we ideally require:

- Type: concentric (CR) or eccentric (ER)
- Standard (e.g. ASME B16.9 or EN 10253)
- Material grade and, if applicable, heat restriction
- Large and small nominal size (DN / NPS), wall thickness or schedule
- Quantity and requested delivery date
- Required documentation (3.1 / 3.2, NDT, external inspection)

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