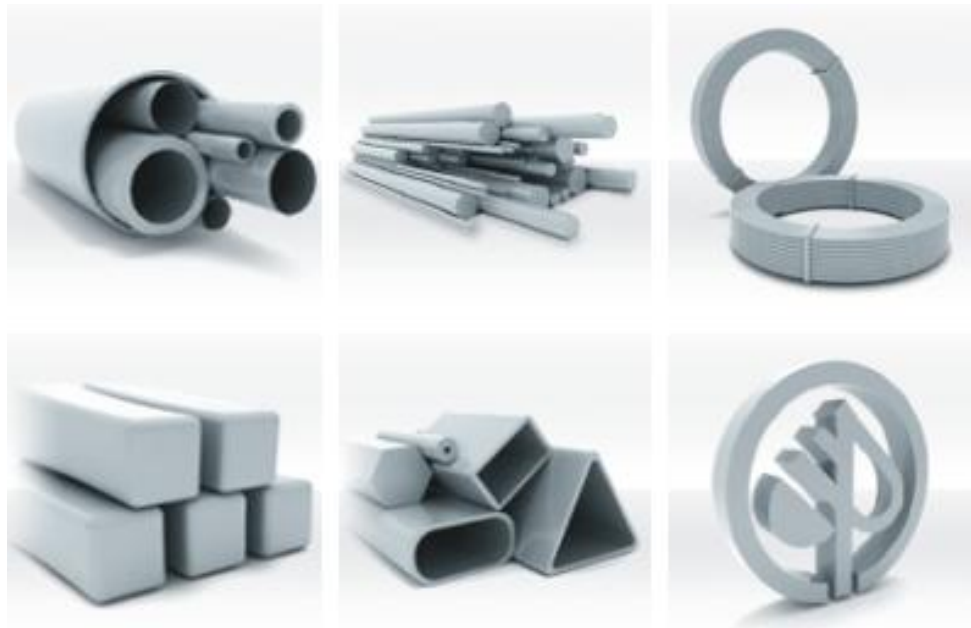


# VÁLCOVNY TRUB CHOMUTOV A.S.

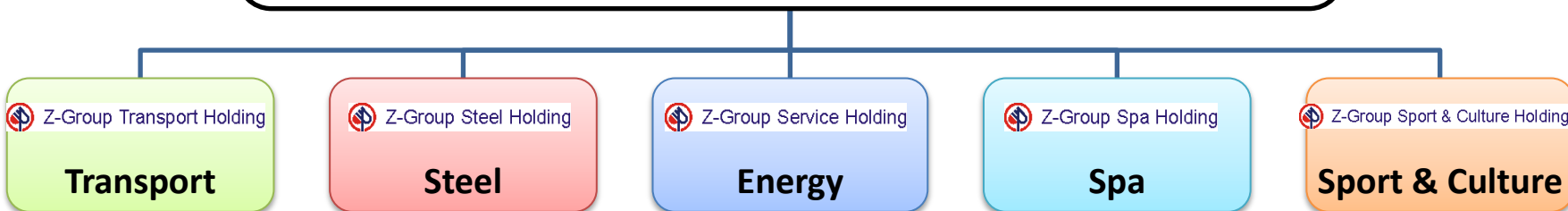
## Company profile 2017

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# Z-GROUP holding structure

JUDr. Ing. Zdenek Zemek  
Chairman of the Board, majority owner



**Válcovny trub Chomutov a.s.**



**VÁLCOVNY TRUB  
CHOMUTOV**



**ŽELEZÁŘNY  
HRÁDEK**



**POLDI**

**Z-Group Steel Holding, a.s.**



**ŽELEZÁŘNY  
VESELÍ**

# Structure of Steel Holding



## Z-Group Steel Holding



### **Tubes**

- hot extruded

### **Bars**

### **Special profiles**

### **Ingots**



### **Tubes**

- seamless  
carbon & alloy steel



### **Tubes**

- drawn
- welded
- zinc dipping

### **Special profiles**

## Company history

**Z-GROUP | Steel Holding** has successfully carried on the long tradition of these Czech-Moravian metallurgical companies:

### Válcovny trub Chomutov

- founded by the Mannesmann company in 1890

### Železářny Hrádek

- founded by entrepreneur Rudolf Hudlický in 1900

### Železářny Veselí

- founded in 1962

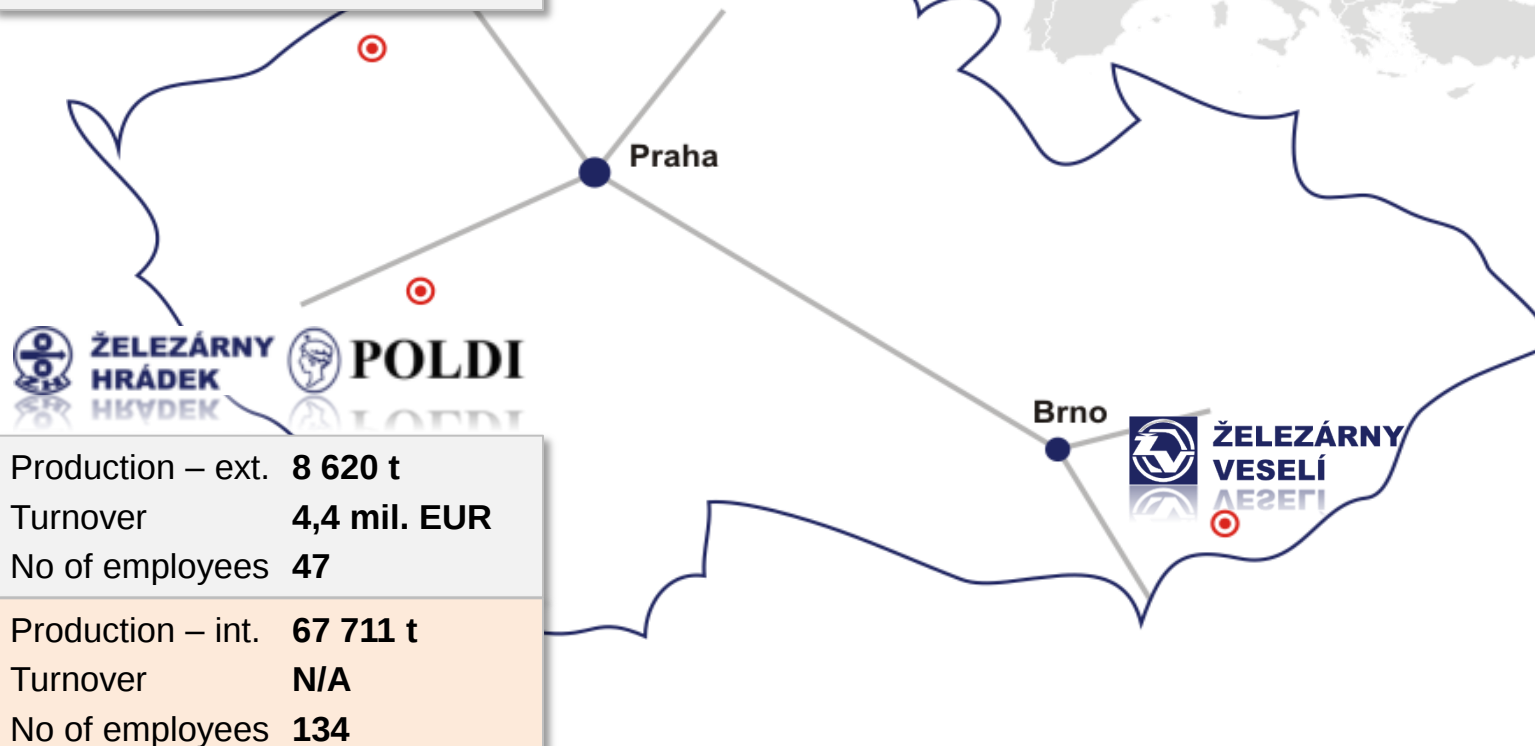


## Key indicators



|                 |               |
|-----------------|---------------|
| Production      | 41 294 t      |
| Turnover        | 40,9 mil. EUR |
| No of employees | 262           |

|                 |               |
|-----------------|---------------|
| Production 2016 | 49 914 t      |
| Turnover 2016   | 45,3 mil. EUR |
| No of employees | 530           |



## Our strength

- Tradition
- Experience
- Flexibility
- Minimum order quantity = 1 ton
- Own steel inputs – Steel works in Hradek
- Own transport
- Price competitiveness
- Quality

# Certificates



## System certificates:

- EN ISO 9001:2008
- EN ISO 14001:2004

## Product certificates:

- API 5L
- CPD EN 10210
- PED 2014/68/EU AD2000 W0
- Lloyd's Register EMEA
- BUREAU VERITAS
- DET NORSKE VERITAS



## System certificates:

- EN ISO 9001:2008

## Product certificates:

- DET NORSKE VERITAS
- PED 97-23 AD2000 W0



## System certificates:

- EN ISO 9001:2008

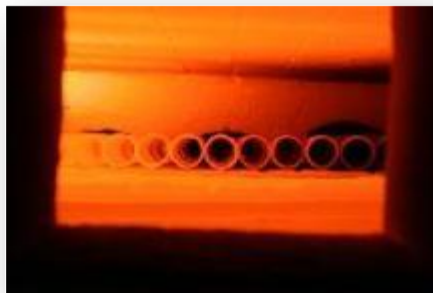
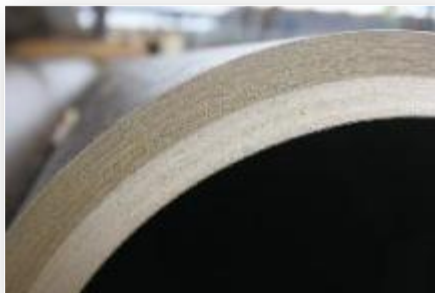
## Product certificates:

- PED 97-23 AD2000 W0
- DVGW
- EN 10219
- CE 0045 CPD 0940
- EN 10255



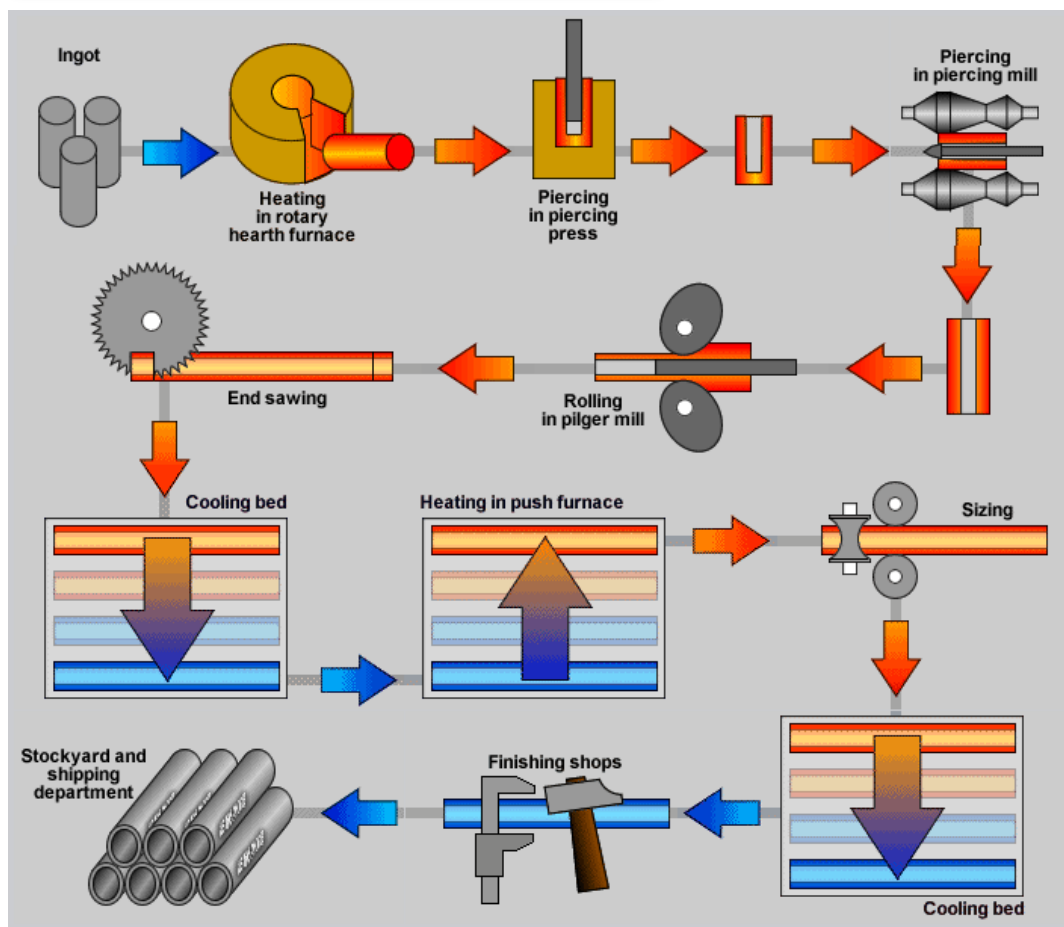
## Product portfolio

| Seamless tubes     | Diameter [mm]         | Wall [mm] |
|--------------------|-----------------------|-----------|
| Basic dimensions   | 273 - 660             | 9.5 - 72  |
| Assortment         | According to standard |           |
| Boiler steel tubes | ASTM / ASME           |           |
| Boiler steel tubes | DIN, EN, CSN, TU      |           |
| Carbon steel tubes | ASTM / ASME, API      |           |
| Carbon steel tubes | DIN, EN, CSN, GOST    |           |





## Production process



## Testing

### Destructive

- tensile test
- impact test
- flattening test
- bend test
- ring test

### Non-destructive

- hydrotest
- UT test
- magnetic particle test
- liquid penetrant test
- hardness test
- PMI

### Chemical analysis

### Metallography

- microstructure
- macrostructure
- micro-purity
- grain size



## Applications | Use of products

### Power engineering

*Structures, boilers, incinerators, electric plants*

### Oil pipelines

*Oil pipelines, oil tracks*

### Natural gas industry

*Natural gas lines, pipe connections*

### Waterworks

*Water connections, water lines*

### Mining industry

### Chemical industry

### Industrial equipment

### Construction industry





## Main customers

### Distributors, end-users, traders

AMERICAN PIPING PRODUCTS

AYDIN BORU

BENTELER GROUP

BUHLMANN GROUP

CUNADO GROUP

EISEN + BAUSTAHL

EZEFLOW

HOBERG & DRIESCH

HORST KURVERS

INCOS

INTERFER

NATIONAL TUBE SUPPLY Group

PROJECT MATERIALS

SIGMA

THYSSENKRUPP GROUP

VAN LEEUWEN GROUP

### Certificates

EIL

PETROBRAS

IBR

SAIPEM ENI

Razreshenie TU-14-3R-55-2001

### Registrations / approvals

PETRONAS

ALSTOM

OMV

RELIANCE INDUSTRIES

REPSOL

SCHLUMBERGER

ExxonMobil

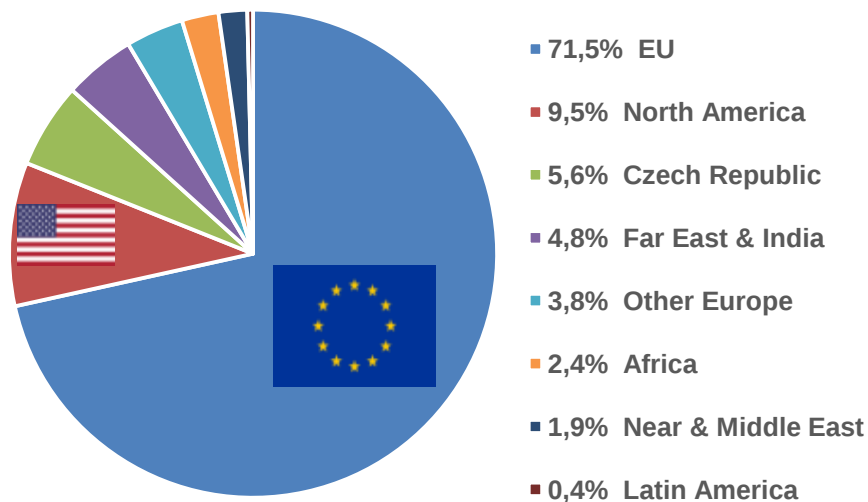
BHEL

Rosneft

GAMA POWER



## Sales territories



### EU countries

Austria, Belgium, Croatia, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Italy, Lithuania, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden

### North America

Canada, USA

### Far East & India

China, India, Korea, Malaysia, Taiwan, Thailand, Vietnam

### Other Europe

Belarus, Norway, Russia, Serbia, Ukraine

### Africa

Algeria, Egypt, South Africa

### Near & Middle East

Turkey, UAE

### Latin America

Brasil, Cuba, Dominican Republic

## Product portfolio

| Hot rolled          | Dimensions [mm]     |
|---------------------|---------------------|
| Square billets      | 70 x 70 - 140 x 140 |
| Round steel bars    | 70 - 140            |
| Square steel bars   | 70 x 70 - 140 x 140 |
| Special HK profiles | Custom order        |

| Cold drawn steel     | Sizes [mm]        |
|----------------------|-------------------|
| Round steel bars     | 16 - 60           |
| Square steel bars    | 15 x 15 - 60 x 60 |
| Flat steel bars      | 16 - 100 x 4 - 40 |
| Hexagonal steel bars | 15 - 70           |
| Special HK profiles  | Upon agreement    |

| Peeled steel     | Diameter [mm] |
|------------------|---------------|
| Round steel bars | 10 - 100      |

| Extruded tubes      | Diameter [mm]  | Wall [mm] |
|---------------------|----------------|-----------|
| Hot extruded        | 30 - 114       | 4.5 - 30  |
| Special HK profiles | Upon agreement |           |

| Ingots                      | Weight [kg]   | Steel grade                                             |
|-----------------------------|---------------|---------------------------------------------------------|
| Square, round, twelve-sided | 1 225 - 4 050 | CSN class 11-16, 19 steel and their foreign equivalents |



# Characteristics of ingots production

- Use of ingots**
- input for seamless hot rolled production (round ingots)
  - input for hot rolled steel bars production (square ingots)
  - forgings (polygonal ingots)
  - rolled hoops production (round ingots)

|                                                                                      |                        |
|--------------------------------------------------------------------------------------|------------------------|
| Furnace type and capacity                                                            | EAF / LF / VD – 11 t/h |
| Source material                                                                      | scrap                  |
| Quantity per heat                                                                    | 45 t                   |
| Max quantity of heats per day / week                                                 | 270 / 1800 t           |
| Min quantity for batch or PO                                                         | 1 heat = 45 t          |
| Possibility of vakuum degassing                                                      | yes VD                 |
| Checking method                                                                      | visual inspection only |
| Steel killing                                                                        | by Al                  |
| Max dispatched quantity per day & number of days/weeks to earliest possible dispatch | 200 t / 10 days        |

- Deep dehydrogenization of low & medium alloy carbon steel melt to level below 1,5 ppm H<sub>2</sub>, measured by HYDRIS device. Acc to requirement it is possible below 1,2 ppm H<sub>2</sub>.
- Deep desulfurization, S max 50 (30) ppm (analysis by LECO device)
- Denitrogenization, N max 70 ppm – melt; N max 90 ppm – ingot
- Total oxygen max 15 ppm

## Applications | Use of products

### Automotive industry

*Parts of control, shafts, transmission ,  
bearings, valves, strength bolts*

### Industrial equipment

*Shafts of machines, machining center parts, Bearing  
 housings, bearings, instrument for wood , tools and tool  
 holders of machines*

### Power engineering

*Shafts of wind power plants*

### Marine Industry

*Shafts*

### Mining industry

*Components of conveyor systems, drilling rings*

### Construction industry

*Grinding systém for construction  
materials*

### Furniture

*Parts of strongbox*

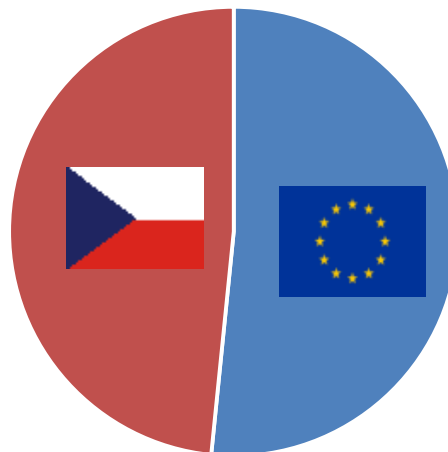


## Main customers

**Industries – Automotive    Mining**  
**Construction    Industrial**  
**equipment ....**

**ALOIS SCHMITT**  
**CZECH PRECISION FORGE**  
**EHG STAHLZENTRUM**  
**ERICH HAGELAUER**  
**FERONA**  
**HEINE+BEISSWENGER**  
**IMFEREX**  
**INTERFER EDELSTAHL**  
**JUCHHEIM HANDELS**  
**KRALOPOLSKA STEEL**  
**PERNAT SMJ**  
**PILANA MCT**  
**SCHMOLZ+BICKENBACH**  
**ZDAS SGS**  
**ZKL**

## Sales territories



■ 51,6% EU  
■ 48,4% Czech Republic

### EU countries

Austria, Denmark, Finland, France Germany,  
 Hungary, Poland, Serbia, Slovakia, Slovenia