

FISKARS
EST. GROUP 1649

◆
**Company
presentation**

RONNY GRÖNING

LÄMPÖKÄSITTELY- JA TAONTAPÄIVÄT 13-14.10.2022



APRIL 2022 // v1



Founded in **1649**

Our brands are present in more than 100 countries

We have more than 350 own stores

Employees globally 7,000

OUR FAMILY OF BRANDS

FISKARS
EST. GROUP 1649



FISKARS®




ROYAL COPENHAGEN
PUREVOR TO HER MAJESTY THE QUEEN OF DENMARK



iittala



 GERBER®



MOOMIN
by ARABIA

WATERFORD
IRELAND 1783



WEDGWOOD
ENGLAND 1759



ARABIA
1873



HACKMAN®


ROGASKA



ROYAL ALBERT
ENGLAND 1904



ROYAL DOULTON
LONDON 1815




Rörstrand



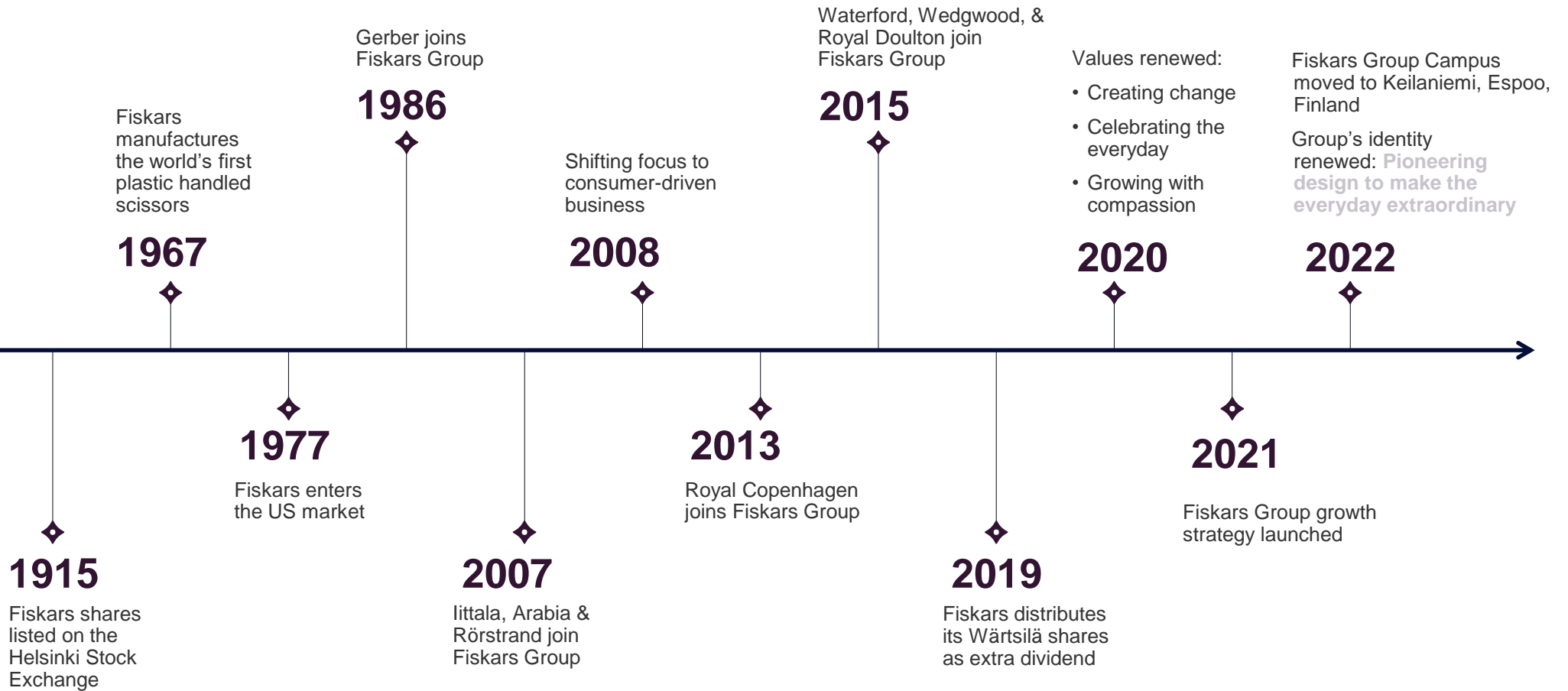
EXPLORE ALL OUR BRANDS
AT [FISKARSGROUP.COM](https://www.fiskarsgroup.com)



Fiskars Group 372 years

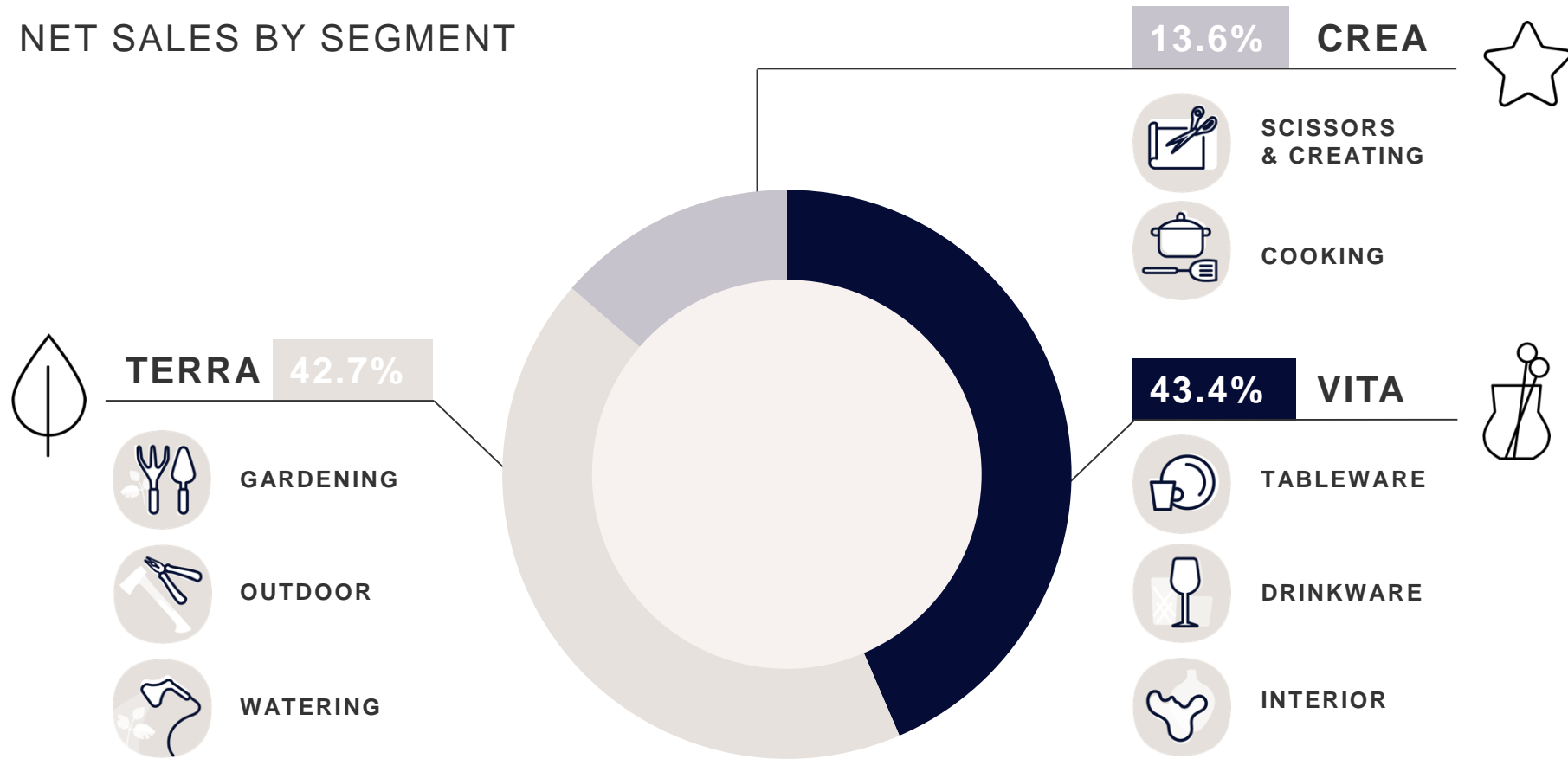


FISKARS
1649



Key categories in 2021

NET SALES BY SEGMENT



FISKARS
◆
GROUP

Billnäs Factory presentation

Ronny Gröning
Lämpökäsittely- ja taontapäivät 13-14.10.2022



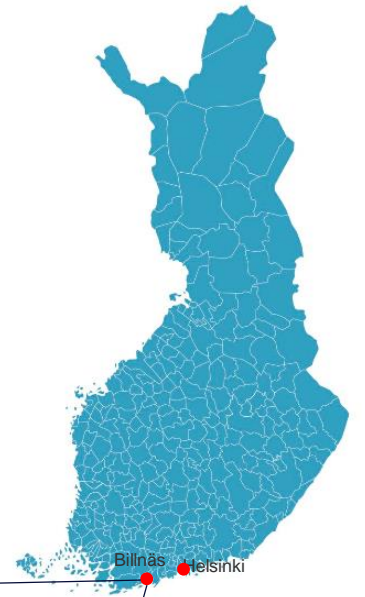
Billnäs Factory: Place and history

Billnäs factory is located about 80 km southwest from Helsinki and 15 km from our roots Fiskars village.

First part of the Billnäs factory was built in 1973 and expanded a couple of times during last decades.

Billnäs factory consist of two separate building; east and west. Total production area is about 13000 square meters.

At the same site we have also Billnäs regional Distribution Center, part of R&D team and test lab



Billnäs factory: Products

X series



Norden



A series



Snow tools



Billnäs factory: Products

Classic



Functional form



Sharpeners



Forging products:

~60 customers
~400 different products



Takeen ominaisuudet



Hyvät:

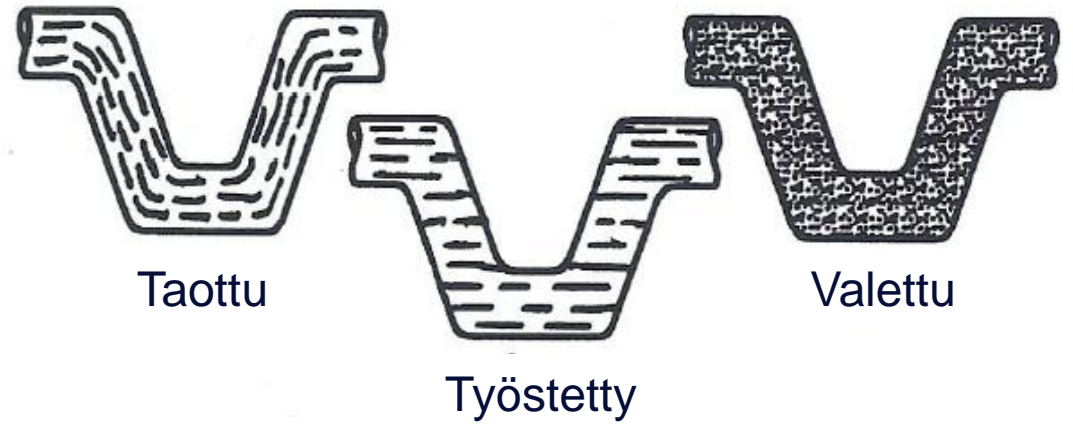
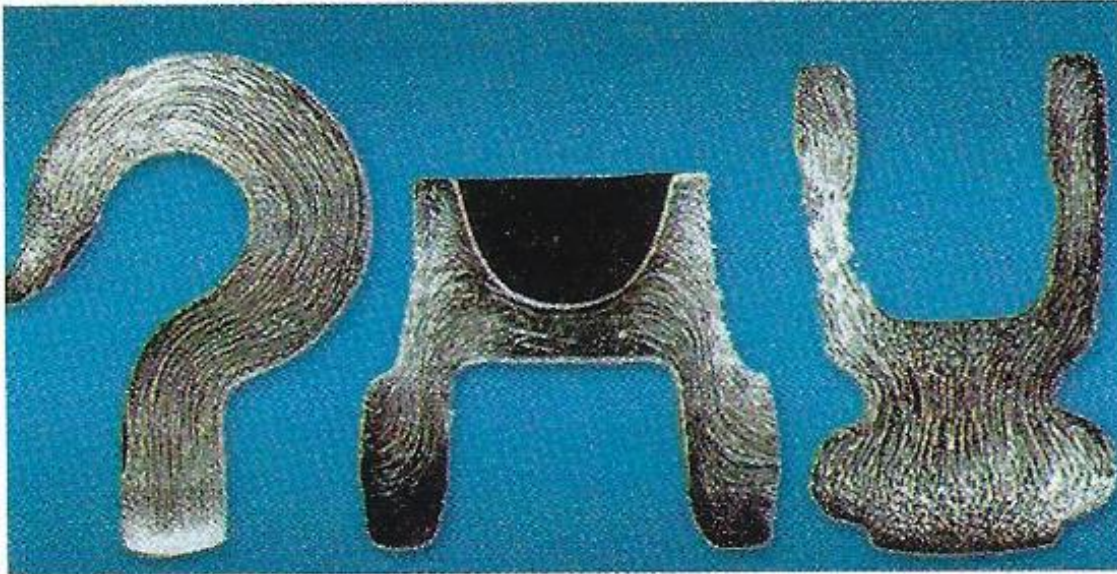
- **Lujuus**
- **Tiivis rakenne**
- **Mittatarkkuus**
- **Raaka-aineen säästö**

Heikkoudet:

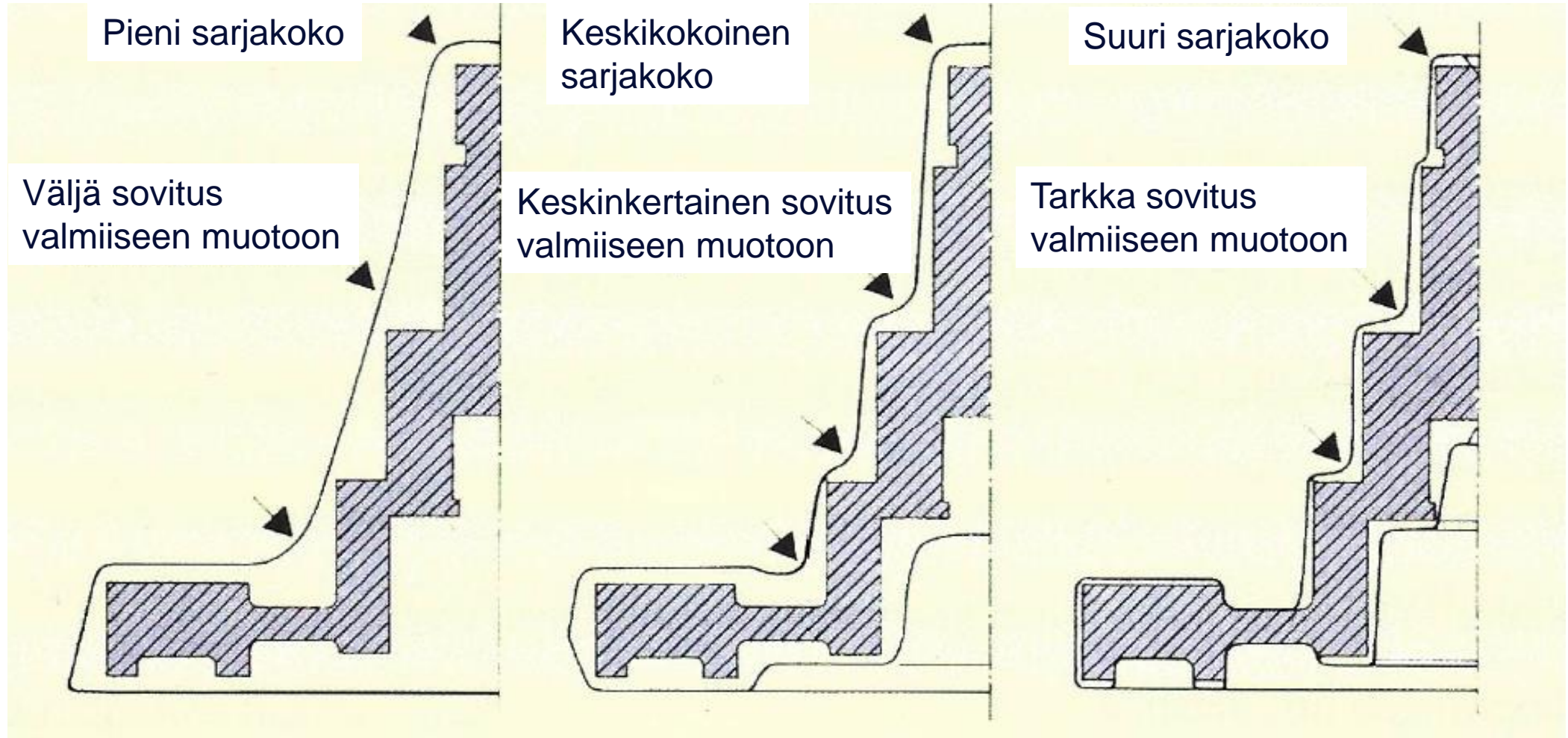
- **Valmistusmäärä, sarjakoko**
- **Työkalukustannus**



Takeen syy rakenne

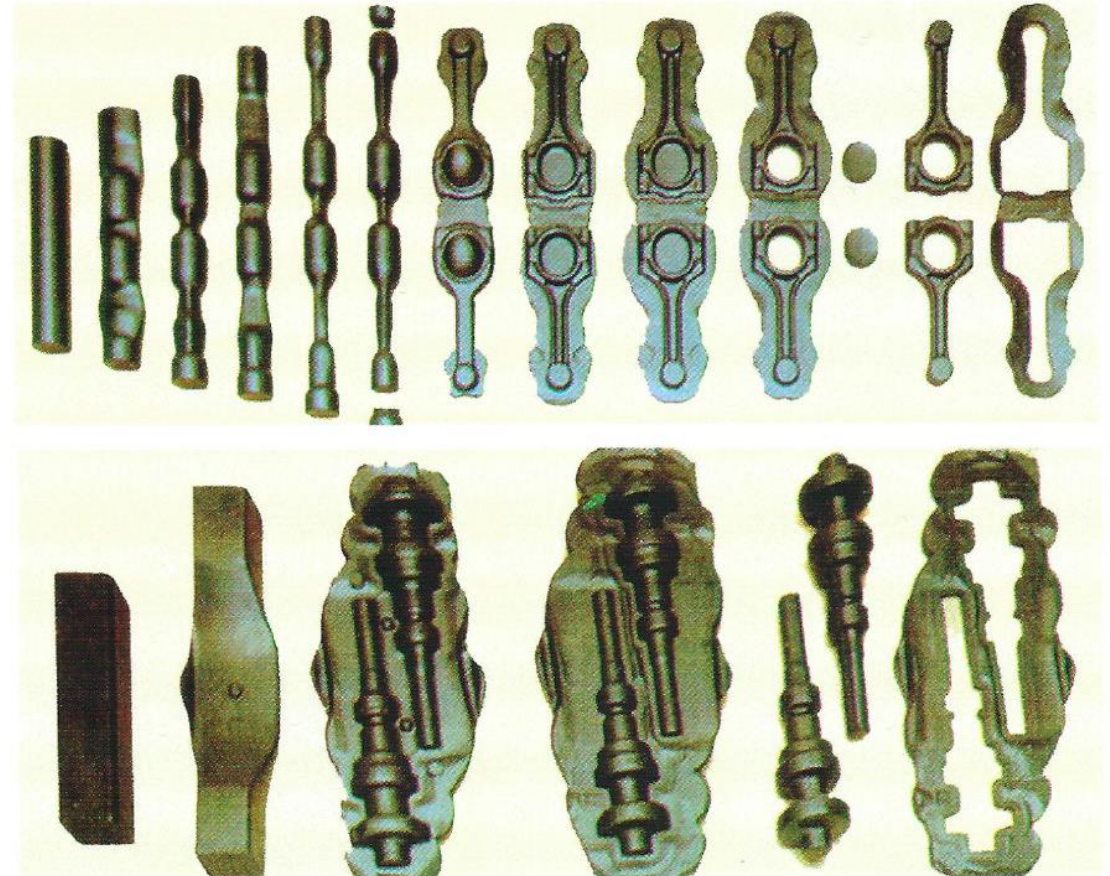


Takeen työstövarat



Takeen valmistus:

- Aihion katkaisu
- Aihion kuumennus
- Hilseen poisto
- Esiaihiointi
- Taonta
- Purseenleikkaus
- Suora karkaisu + päästö



Takeen toleranssit, mitkä asiat vaikuttavat

- Takeen paino
- Jakotason muoto
- Teräksen ryhmä
- Muototekijä

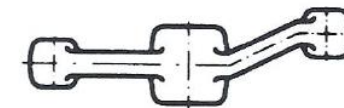
Jakotason muoto



Suora jakotaso



Symmetrinen jakotaso



Epäsymmetrinen jakotaso

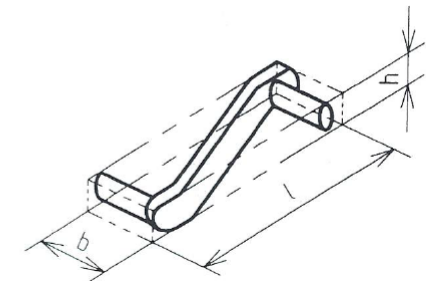
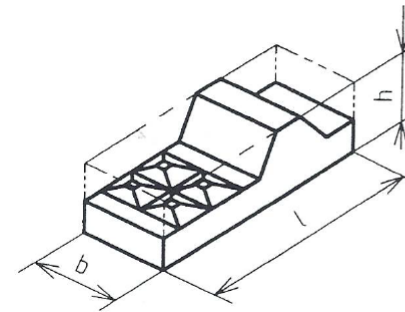
Takeen toleranssit, mitkä asiat vaikuttavat

Teräksen ryhmä

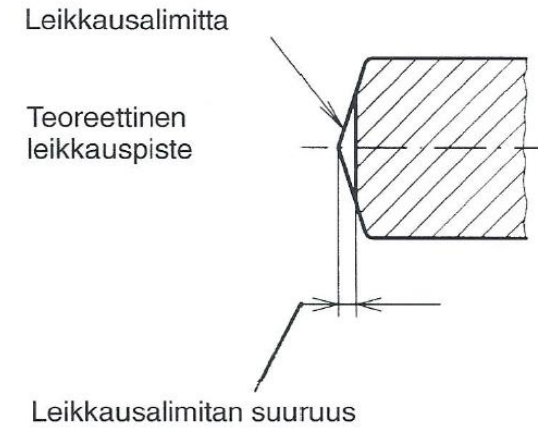
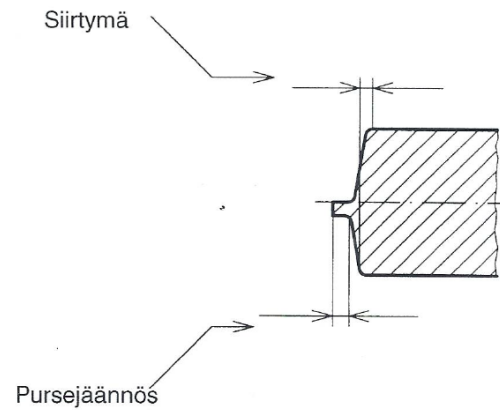
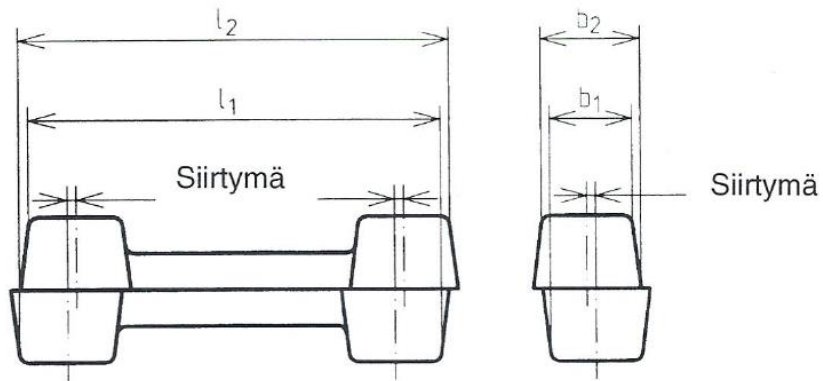
- **M1: Hiilipitoisuus max 0,65% ja seosainepitoisuuksien summa max 5 %**
- **M2: Hiilipitoisuus yli 0,65% tai seosainepitoisuuksien summa yli 5 %**

Muototekijä

Takeen paino / Vaippakappaleen paino

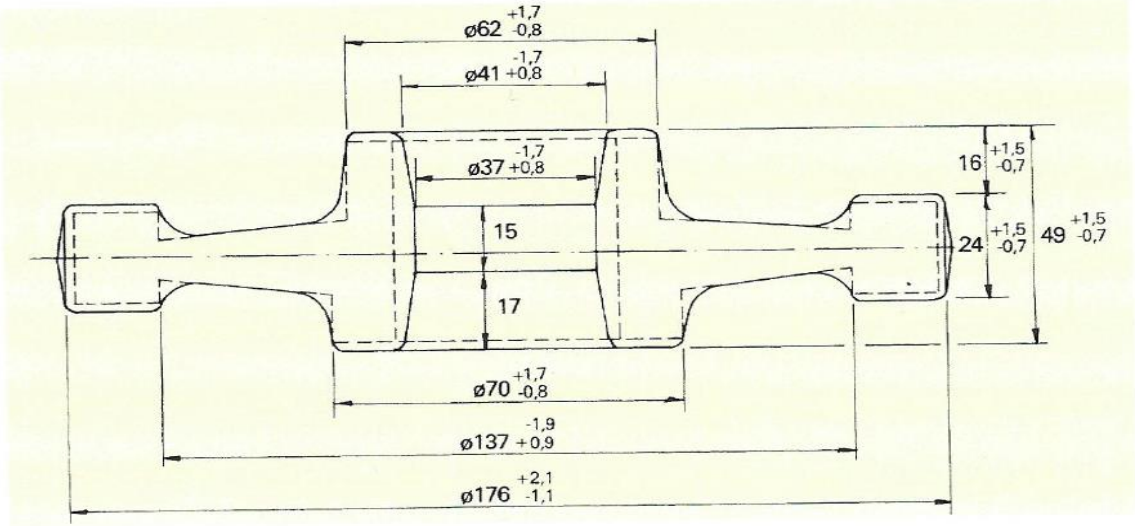
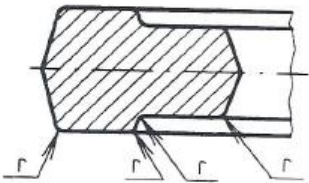


Muottien siirtymä ja purseen jäännös tai alimitta



Säteiden toleranssit ja esimerkki takeen mitoituksesta

r (mm)	+	-
$r \leq 10$	50 %	25 %
$10 < r \leq 32$	40 %	20 %
$32 < r \leq 100$	32 %	15 %
$r > 100$	25 %	10 %



Lähteet:

- **Sänksmide, Jan Bodin och Smidesgruppen, 2007**
- **Taonta valmistusvaihtoehtona, MET, 2000**
- **SFS-EN 10243-1:1999**

**Terästakeet. Muottitakeet. Mittatoleranssit
Vasaroilla ja pystypuristimilla valmistetut takeet**



Kiitos!

