



GENERAL CATALOGUE

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Where we are

Introducing

Tecnofondi S.p.A has been producing metal heads for tanks, reservoirs and boilers since its opening in 1965.

At the beginning the production was specialized for oil tanks for domestic heating. Later it concerned also the thermo-hydraulic field (water accumulator, autoclaves, boilers), farming industry (liquid manure spreader, slurry tanks, filters for water irrigation), building sector (concrete mixer, tanks for chalk and cement, construction site tanks), LPG (tanks for domestic and automotive use).

In the last 10 years the production for the supplied sectors has significantly increased because of the implementation of a unit exclusively for the production of stainless steel heads up to reaching the food industry (tanks and plants for the milk and cheese sector, wine industry, production of fruit juice and beer), chemical and pharmaceutical industry (agitators, mixers, reactors) and fabric industry (tanks for the treatment of fabrics).

The Company

The company has developed 3 different units which are separated from each other:

- unit for coils and sheets in carbon steel
- unit for heads in carbon steel
- unit for heads in stainless steel and nickel and aluminium alloys.



1. Unit for coils and sheets

This unit is located in a production hall of 3800m² and disposes of a flattening plant, which is capable to flatten coils up to a wideness of 2200mm and up to a thickness of 12mm. The sheets will be cut according to the requested dimensions of the final customer and at last palletized.

This area disposes of a large pool with a stock of coils and a large stock of flattened sheets in quality **S235JR** and **S355JR** with the property to be galvanised.

We have also available coils and metal sheets in quality S275JR , P275NH , P355NH e S355J2G3.





2. Carbon steel unit

The Carbon steel unit (5500m²) is located in the historical company headquarters of Tecnofondi together with the administration and commercial offices.

It consists of two sectors; one for the production of rolled heads and one for the production of pressed heads. Auxiliary to the main departments, there are some further departments (tooling department, welding area, disc cutting and edge turning).

It has also a large storage of end products, available type D and E, which will be lengthily explained on the further pages.

3. Stainless steel and nickel and aluminium alloys department

The stainless steel department is near to the main department but completely separated from it.

It was built in the year 2008 and it was projected and realized exclusively for the production of stainless steel heads. It is subdivided into the following sectors:

- stock of raw material and PVC protective foil wrapping
- warehouse of standard heads in AISI 304 and AISI 316
- plasma cutting to get discs or half discs
- welding of sheets and half discs
- flanging and dishing department
- edge turning
- internal and external grinding.



The catalogue and general guide for the consultation

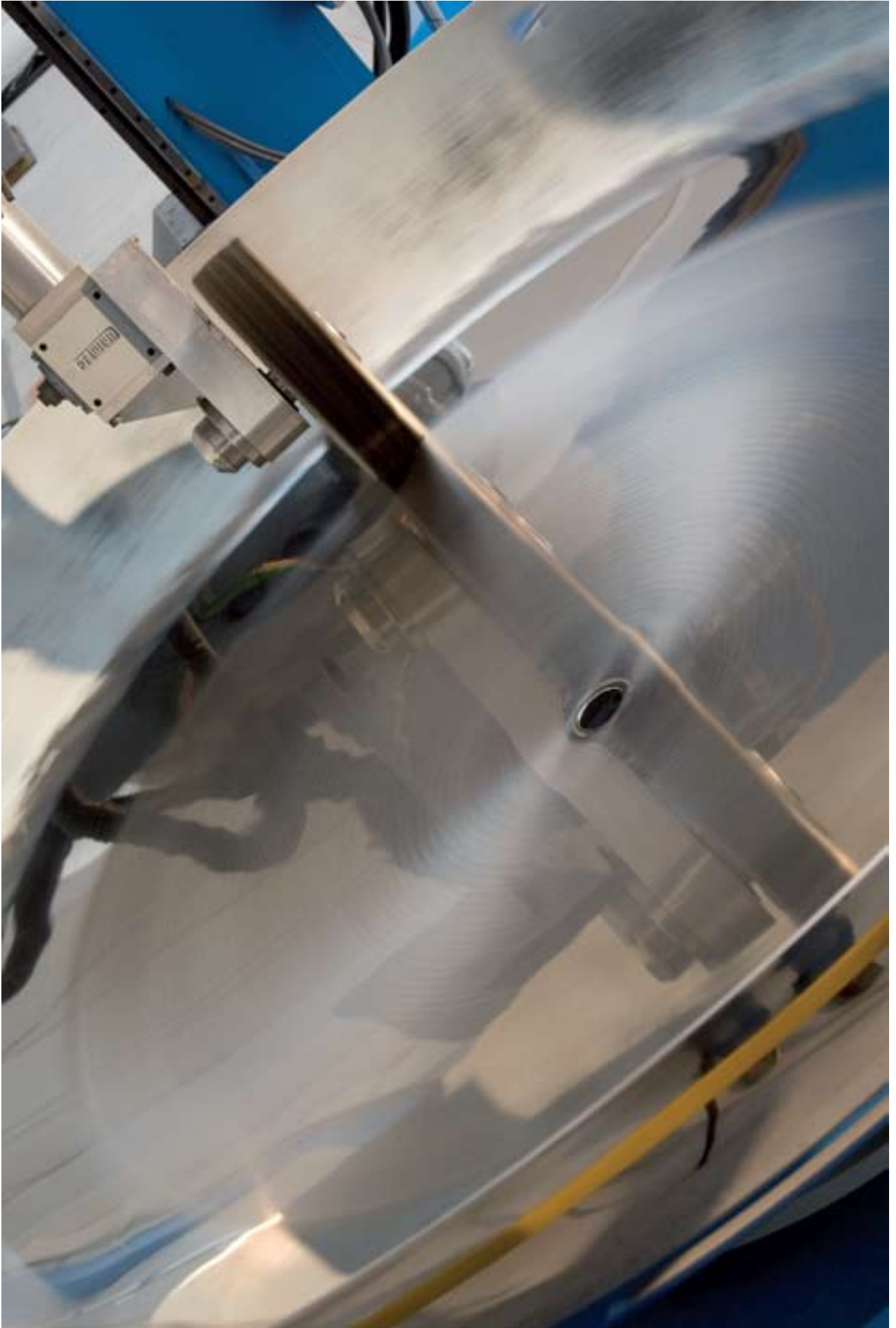
This catalogue was made to give a complete tool to the customers in order to verify better the large suggested production range. So there is the possibility to choose the more fittest heads for the own construction needs from our heads on stock with savings of time and money.

Therefore we suggest to read it with attention and, specially when it has to do with small sequences, to base them on this dimensions during the developments of the projects in order to have them available immediately when they are needed during the production.

We underline, that the products described in this catalogue are our habitual production. But anyway products with different dimensions and characteristics will be examined to verify their feasibility and the eventual production.

Particularly the tables describe the heads with dimensions most common sizes, but it is also possible to realize heads with in-between dimensions.

We lastly point out, that the indicated values of the tables express technical indications, that anyway have to be reviewed in the order procedure.



Quality

The **UNI EN ISO 9001** certification that Tecnofondi has received since 1996, which is controlled periodically from the charged authority, is a guarantee that our company applies internal procedures for the quality management. Further we are able to monitor the whole production process starting from the material purchasing up to the after sales service.

Tecnofondi has also implemented and certified a quality assurance system according to the appendix 1 par. 4.3 of the directive **PED 97/23/EC**, which also has been verified and certified it's organized system according to the German rules **AD2000-Merkblatt W0**.



UNI EN ISO 9001



AD2000-Merkblatt W0





Technical notes

Production methods and dimensions of the products

The heads are manufactured through two production methods: either through the pressing process (so-called press-formed heads) or through dishing and flanging/rolling (so-called rolled heads).

In this way it is possible to get the following dimensions (max):

Diameter: 5000mm

Thickness: 32mm



Welding

If the size of the plates does not possess the required dimensions, Tecnofondi will carry out a welding process in order to make them suitable for manufacturing.

The welding process is executed by qualified welders, in full compliance with the welding process duly defined and qualified by the [UNI EN 287-1](#) and [UNI EN 15607](#).

The company is able to execute non destructive tests (radiographic inspection) on explicit demand.



Materials supplied by customers

Material, supplied by customers must have the following specifications. The blank discs must have grinded edges and in case of welded discs, the welding line must have been made with "x-bevelled" edges to ensure full and correct penetration. Furthermore, the welding line will not be executed on the original edges, but after removing at least a part of 20mm, which is subject to suffer working fissures (this is not necessary for plates from coils).

The plates must always be assembled following the direction of rolling.

In case of supplied square plates, their sizes must always be more than 20mm in comparison to the resulting disc.

It is normal practice for material supplied by the customer always to get from our technical office the approval of the dimensions of the blank discs or square plates before cutting them.



Edge trimming

The dished heads can be supplied with raw or trimmed edges. Trimming is recommended to obtain the correct height of the dished head and for a perfect flatness of the edge.

We suggest to view the section of the edge trimming in order to indicate the fit edge trimming of your needs. It is also possible to flange the edge (joggled or beaded edge) in order to achieve a better fitting of the head into the shell, up to a maximum diameter of 1800mm and a maximum thickness of 6 mm (tables of flanged edges shown on the following pages).

Tolerances

The tolerances applied for the pressed heads are defined according to the applicable norms (particularly the norm [AFNOR NF E 81-100](#)).

For the rolled heads are as follows:

On the external diameter:

$< \varnothing 2000 = \pm 2 \text{‰} \cdot \varnothing$

$> \varnothing 2000 = \pm 3 \text{‰} \cdot \varnothing$

Ovality

(difference between the minimum diameter and the maximum diameter):

$3 \text{‰} \cdot \varnothing$

Total height

(for heads with raw edge):

$-0 + 25\text{mm}$

Materials

Generally we can work on materials with a maximum tensile strength of **750 MPa** and with a minimum elongation of **22/24%**.

Carbon steel

Coils and dished heads made of carbon steel on stock are in: **S235JR** according the norm **UNI EN 10025-2**.

This material can be hot galvanized at the following conditions:

1 - % maximal **Si < 0,03 %**

2 - % of **Si+2,5P < 0,09 %**

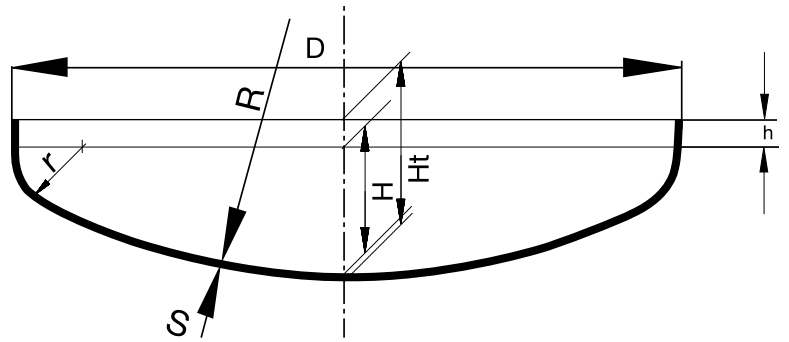
(In compliance with the French norm **AFNOR A (35-503/94)**).

We also have a stock of raw material of carbon steel plates **S355JR** and **S275JR** according to the norm **UNI EN 10025-2**.

Stainless steel

Stock of stainless steel heads and sheets are made of: **AISI 304** and **AISI 316** according to the norm **ASTM A240**.





Key to symbols

D	outside diameter
D_i	inside diameter
s	thickness
R	dish radius
r	knuckle radius

h	straight flange
H_t	overall external height = $H+h+s$
H	overall internal height without straight flange
S_v	diameter of the blank
V	capacity in litres of the dished head

Dished heads table

Different types of pressed and rolled heads

Type	Drawing	Technical specifications and dimensions																				
A		<table border="1"> <thead> <tr> <th>D</th> <th>R</th> <th>s</th> </tr> </thead> <tbody> <tr> <td>400 ÷ 5000</td> <td>2 x D</td> <td>3 ÷ 60</td> </tr> <tr> <td></td> <td>1,5 x D</td> <td></td> </tr> <tr> <td></td> <td>1 x D</td> <td></td> </tr> <tr> <td></td> <td>0,8 x D</td> <td></td> </tr> </tbody> </table>	D	R	s	400 ÷ 5000	2 x D	3 ÷ 60		1,5 x D			1 x D			0,8 x D						
		D	R	s																		
400 ÷ 5000	2 x D	3 ÷ 60																				
	1,5 x D																					
	1 x D																					
	0,8 x D																					
Discs, only dished	<table border="1"> <thead> <tr> <th colspan="2">R = 1,5 x D</th> </tr> </thead> <tbody> <tr> <td>SV</td> <td>D x 1,015</td> </tr> <tr> <td>HT</td> <td>D x 0,075 + S</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">R = D</th> </tr> </thead> <tbody> <tr> <td>SV</td> <td>D x 1,09</td> </tr> <tr> <td>HT</td> <td>D x 0,140 + S</td> </tr> </tbody> </table>	R = 1,5 x D		SV	D x 1,015	HT	D x 0,075 + S	R = D		SV	D x 1,09	HT	D x 0,140 + S									
R = 1,5 x D																						
SV	D x 1,015																					
HT	D x 0,075 + S																					
R = D																						
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HT	D x 0,140 + S																					
B		<table border="1"> <thead> <tr> <th>D</th> <th>r</th> <th>h</th> <th>s</th> </tr> </thead> <tbody> <tr> <td>500 ÷ 5000</td> <td>50</td> <td>≥ 5 x S</td> <td>3 ÷ 30</td> </tr> </tbody> </table>	D	r	h	s	500 ÷ 5000	50	≥ 5 x S	3 ÷ 30												
		D	r	h	s																	
500 ÷ 5000	50	≥ 5 x S	3 ÷ 30																			
Flat heads with small knuckle radius (p. 23)	<table border="1"> <tbody> <tr> <td>SV</td> <td>D + 50 + 2h</td> </tr> <tr> <td>Ht</td> <td>50 + h + s</td> </tr> </tbody> </table>	SV	D + 50 + 2h	Ht	50 + h + s																	
SV	D + 50 + 2h																					
Ht	50 + h + s																					
C		<table border="1"> <thead> <tr> <th>D</th> <th>r</th> <th>h</th> <th>s</th> </tr> </thead> <tbody> <tr> <td>500 ÷ 5000</td> <td>D/10</td> <td>≥ 5 x S</td> <td>3 ÷ 30</td> </tr> </tbody> </table>	D	r	h	s	500 ÷ 5000	D/10	≥ 5 x S	3 ÷ 30												
		D	r	h	s																	
500 ÷ 5000	D/10	≥ 5 x S	3 ÷ 30																			
Flat heads with big knuckle radius	<table border="1"> <tbody> <tr> <td>SV</td> <td>D x 1,09 + 2h</td> </tr> <tr> <td>Ht</td> <td>D x 0,1 + h + s</td> </tr> </tbody> </table>	SV	D x 1,09 + 2h	Ht	D x 0,1 + h + s																	
SV	D x 1,09 + 2h																					
Ht	D x 0,1 + h + s																					
D		<table border="1"> <thead> <tr> <th>D</th> <th>R</th> <th>r</th> <th>h</th> <th>s</th> </tr> </thead> <tbody> <tr> <td>500 ÷ 3050</td> <td>1,5 ÷ 2 D</td> <td>50</td> <td>≥ 5 x S</td> <td>3 ÷ 32</td> </tr> <tr> <td>3100 ÷ 3450</td> <td>1,5 ÷ 2 D</td> <td>80</td> <td>≥ 5 x S</td> <td>3 ÷ 32</td> </tr> <tr> <td>3500 ÷ 5000</td> <td>1,5 ÷ 2 D</td> <td>100</td> <td>≥ 5 x S</td> <td>3 ÷ 32</td> </tr> </tbody> </table>	D	R	r	h	s	500 ÷ 3050	1,5 ÷ 2 D	50	≥ 5 x S	3 ÷ 32	3100 ÷ 3450	1,5 ÷ 2 D	80	≥ 5 x S	3 ÷ 32	3500 ÷ 5000	1,5 ÷ 2 D	100	≥ 5 x S	3 ÷ 32
		D	R	r	h	s																
500 ÷ 3050	1,5 ÷ 2 D	50	≥ 5 x S	3 ÷ 32																		
3100 ÷ 3450	1,5 ÷ 2 D	80	≥ 5 x S	3 ÷ 32																		
3500 ÷ 5000	1,5 ÷ 2 D	100	≥ 5 x S	3 ÷ 32																		
Small knuckle radius dished heads (p. 16-17)	<table border="1"> <thead> <tr> <th colspan="2">R = 2D r = 50</th> </tr> </thead> <tbody> <tr> <td>SV</td> <td>D x 1,03 + 2h</td> </tr> <tr> <td>Ht</td> <td>D x 0,090 + h + s</td> </tr> </tbody> </table>	R = 2D r = 50		SV	D x 1,03 + 2h	Ht	D x 0,090 + h + s															
R = 2D r = 50																						
SV	D x 1,03 + 2h																					
Ht	D x 0,090 + h + s																					
DE		<table border="1"> <thead> <tr> <th>D</th> <th>R</th> <th>r</th> <th>h</th> <th>s</th> </tr> </thead> <tbody> <tr> <td>500 ÷ 5000</td> <td>D</td> <td>50 ÷ 180</td> <td>≥ 5 x S</td> <td>3 ÷ 32</td> </tr> </tbody> </table>	D	R	r	h	s	500 ÷ 5000	D	50 ÷ 180	≥ 5 x S	3 ÷ 32										
		D	R	r	h	s																
500 ÷ 5000	D	50 ÷ 180	≥ 5 x S	3 ÷ 32																		
Medium radius heads (p. 22)																						

- With maximum diameters and thicknesses, feasibility much depends on the material used. So, it is always advisable to contact our customers of

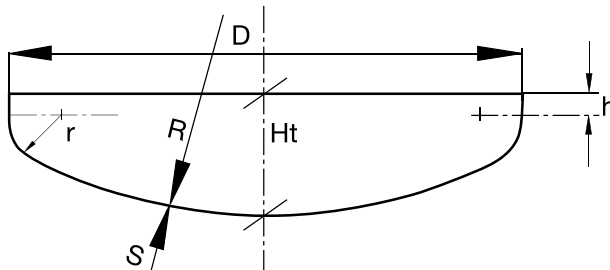
- The formulae are purely theoretical.
- Minimum thickness values refer to flange-formed dished heads

Tipo

Drawing

Technical specifications and dimensions

E

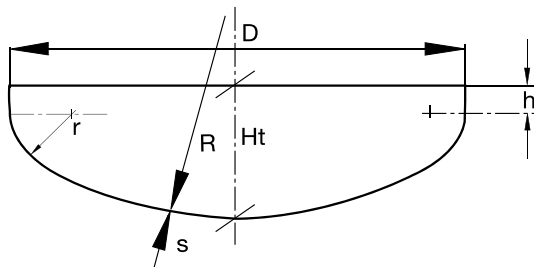


Torispherical heads (p. 18-19)

D	R	r	h	s
320 ÷ 5000	D	D/10	$\geq 5 \times S$	3 ÷ 32

SV	$D \times 1,11 + 2h$
Ht	$D \times 0,194 + h + s$

F

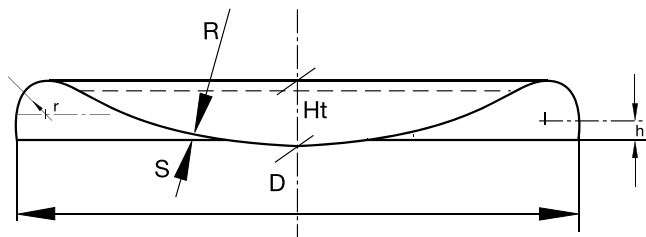


Semielliptical heads (p. 20-21)

D	R	r	h	s
500 ÷ 4000	$0,8 \times D$	D/6,5	$\geq 5 \times S$	3 ÷ 32

SV	$D \times 1,16 + 2h$
Ht	$D \times 0,25 + h + s$

G



Diffuser heads

D	R	r	h	s
500 ÷ 5000	*	*	$\geq 5 \times S$	3 ÷ 30

* on request

H

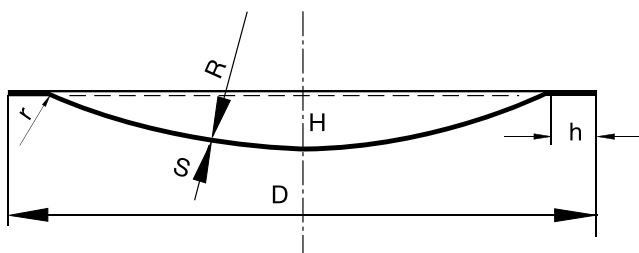
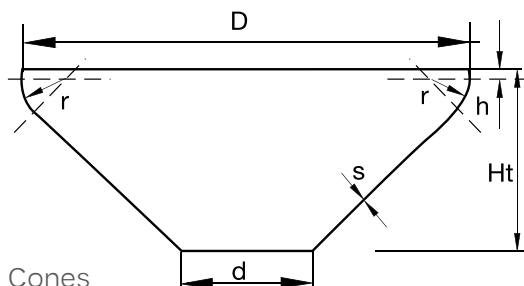


Plate-type heads

D	R	h	s
500 ÷ 5000	*	$\geq 5 \times S$	3 ÷ 30

* on request

I



Cones

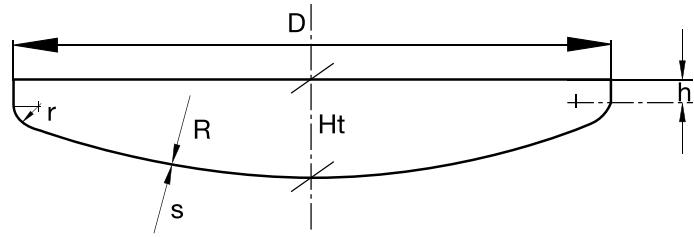
D	r	Ht	h	s	d
500 ÷ 3000	*	max 1150	$\geq 5 \times S$	3 ÷ 32	*

Available also without flanging (open cone)

* on request

Dished head type D

Small knuckle radius dished heads



	D	s	R	r	h	Ht	Kg.	V
	500	1.2	750	35	20	88	2.7	13
•*		1.5	750	35	20	88	3.5	13
*		2	750	35	20	90	4.5	13
*		3	750	35	20	90	7	13

	D	s	R	r	h	Ht	Kg.	V
	550	1.2	650	40	20	108	2.8	18
•*		1.5	650	40	20	108	3.5	18
•*		2	650	40	20	110	5	18
		2.5	650	40	20	110	6.5	18
		3	650	40	20	110	7.5	18
		4	650	40	20	110	10.5	18

	D	s	R	r	h	Ht	Kg.	V
•	600	1.2	950	30	20	95	3.4	19
•*		1.5	950	30	20	100	4.5	19
•*		2	950	30	20	100	6	19
		2.5	950	30	20	105	7.5	19
		3	950	30	20	108	9	19
		4	950	30	20	110	12	19

	D	s	R	r	h	Ht	Kg.	V
•	650	1.2	1000	30	20	100	3.8	23
•*		1.5	1000	30	20	100	5	23
•*		2	1000	30	20	101	6.5	23
		2.5	1000	30	20	101	8.3	23
		3	1000	30	20	102	10	23
		4	1000	30	20	102	14	23

	D	s	R	r	h	Ht	Kg.	V
•	700	1.2	1050	35	20	108	4.8	28
•		1.5	1050	35	20	110	6	28
		2	1050	35	20	112	8	28
		2.5	1050	35	20	112	10	28
		3	1050	35	20	112	12	28
		4	1050	35	20	112	16	28

	D	s	R	r	h	Ht	Kg.	V
•	750	1.2	1100	30	20	112	5.2	33
•*		1.5	1100	30	20	113	6.5	33
•*		2	1100	30	20	113	8.5	33
		2.5	1100	30	20	115	11	33
•		3	1100	30	20	118	13	33
		4	1100	30	20	118	18	33

	D	s	R	r	h	Ht	Kg.	V
	790	2	1200	30	35	125	11	43
		3	1200	30	35	125	16	43
		4	1200	30	35	125	22	43

	D	s	R	r	h	Ht	Kg.	V
•	800	1.2	950	50	20	140	6	45
•*		1.5	950	50	20	140	7.5	45
		2	950	50	20	140	10	45
		2.5	950	50	20	143	13	45
•		3	950	50	20	145	15	45
•		4	950	50	20	147	20	45
•		5	1400	50	30	130	25	48

	D	s	R	r	h	Ht	Kg.	V
•	850	1.2	1300	40	20	123	6.5	47
*		1.5	1300	40	20	123	8	47
•*		2	1300	40	20	125	10.6	47
		2.5	1300	40	20	125	13.5	47
•		3	1300	40	20	127	16	47
•		4	1300	40	20	127	22	47

	D	s	R	r	h	Ht	Kg.	V
•*	900	2	1500	30	20	113	12	49
•		2.5	1500	30	20	113	15	49
•		3	1500	30	20	116	18	49
•		4	1500	30	20	118	24	49
•		5	1500	50	25	125	30	58

	D	s	R	r	h	Ht	Kg.	V
•*	950	1.5	1900	30	20	105	10	52
•*		2	1900	30	20	105	13	52
*		2.5	1900	30	20	107	16	52
*		3	1900	30	20	108	20	52
*		4	1900	30	20	110	26	52
		5	1900	30	20	112	33	52

	D	s	R	r	h	Ht	Kg.	V
*	1000	1.5	2000	30	20	107	11	59
•*		2	2000	30	20	110	15	59
		2.5	2000	30	20	110	18	59
•		3	2000	30	30	118	22	67
•		4	1600	50	30	150	29	82
•		5	1600	50	30	150	37	82

	D	s	R	r	h	Ht	Kg.	V
•*	1100	1.5	2000	30	20	110	13	77
•*		2	2000	30	20	122	17	78
•*		2.5	2000	30	20	123	22	78
•*		3	2000	30	20	123	26	78
•		4	2000	30	20	125	35	78
•		5	2000	30	20	127	45	79

	D	s	R	r	h	Ht	Kg.	V
•	1150	4	1800	50	20	153	38	108

	D	s	R	r	h	Ht	Kg.	V
•	1200	3	2000	50	20	151	31	117
		4	2000	50	30	160	41	127
		5	2000	50	30	160	51	127

	D	s	R	r	h	Ht	Kg.	V
	1250	3	2000	50	20	158	34	130
		4	2000	50	30	170	45	140
		5	2000	50	30	170	56	140

	D	s	R	r	h	Ht	Kg.	V
•*	1270	1.5	1900	30	30	160	17	135
•*		2	2500	30	20	125	23	107
•*		2.5	2500	30	20	126	28	107
•*		3	2500	30	20	126	34	108
•*		4	2500	30	30	135	46	120
•		5	2500	30	30	135	58	120

	D	s	R	r	h	Ht	Kg.	V
•	1300	3	2300	50	30	160	36	148
•		4	2300	50	30	162	48	148
•		5	2300	50	30	164	60	148

	D	s	R	r	h	Ht	Kg.	V
•	1350	4	2300	50	20	161	52	155

	D	s	R	r	h	Ht	Kg.	V
•	1400	3	2500	50	20	159	41	165
•		4	2500	50	30	170	55	180
•		5	2500	50	30	170	68	180

	D	s	R	r	h	Ht	Kg.	V
•*	1430	2	3000	30	20	135	28	140
•*		2.5	3000	30	30	135	35	157
•*		3	3000	30	30	138	43	157
•		4	3000	30	30	142	56	157
•		5	3000	30	30	144	71	157

• These tables show the most common sizes. Intermediate sizes or diameters up to 5000 mm and thicknesses up to 32 mm can also be made.

• Height, weight and volume are theoretical values and as such are merely indicative and must not be taken as a basis for the contract.

	D	s	R	r	h	Ht	Kg.	V
•	1480	5	2600	50	30	178	78	210
•	1500	3	2600	50	20	170	48	200
•		4	2600	50	30	180	64	218
•		5	2600	50	30	180	80	218
•*	1600	2	3200	30	20	145	35	190
•		2.5	3200	30	20	146	45	191
•*		3	3200	30	30	155	54	210
•		4	3200	30	30	157	70	210
•		5	3200	30	40	170	90	230
•		6	2800	50	30	188	108	256
•	1650	4	2800	50	20	180	76	260
•		5	2800	50	25	180	96	260
•	1700	2.5	3400	30	30	160	50	245
•		3	3400	30	30	160	60	245
•		4	3400	30	40	170	80	270
•		5	3400	30	40	170	100	270
•*	1800	3	3000	50	20	200	68	322
•		4	3000	50	20	200	90	322
•		5	3000	50	25	200	113	322
•		6	3000	50	30	209	136	352
•	1840	3	3000	50	30	213	71	372
•		4	3000	50	30	213	95	372
•		5	3000	50	30	214	71	373
•*	1900	3	3200	50	20	195	75	357
•		4	3200	50	20	195	100	357
•		5	3200	50	25	200	125	357
•		6	3200	50	30	207	150	390
•	1950	4	3200	50	30	221	110	430
*	2000	3	3400	50	20	200	85	422
•		3.3	3400	50	20	200	92	422
•*		4	3400	50	20	205	111	422
•		5	3400	50	25	215	138	430
•		6	3400	50	30	221	167	453
•	2050	4	3400	50	30	227	117	485
•		5	3400	50	30	228	146	488
	2100	3	3400	50	30	235	21	523
		4	3400	50	30	235	123	523
		5	3400	50	30	236	154	526
		6	3400	50	30	236	185	526
		8	3400	50	40	248	250	565
•	2200	4	3500	50	30	246	135	595
•		5	3500	50	30	247	167	598
•		6	3500	50	30	247	204	598
•		8	3500	50	40	259	270	642
•		10	3500	50	50	270	340	681
•	2250	4	3800	50	30	240	140	612
•		5	3800	50	30	240	176	612
•		6	3800	50	30	241	211	615

	D	s	R	r	h	Ht	Kg.	V
•		8	3800	50	40	253	290	661
•		10	3800	50	50	264	360	702
•	2300	4	3800	50	30	247	148	653
•		5	3800	50	30	248	185	656
•		6	3800	50	30	249	222	660
•		8	3800	50	40	260	300	704
•		10	3800	50	50	271	380	747
•	2400	4	4000	50	30	253	160	725
•		5	4000	50	30	253	200	725
•		6	4000	50	30	253	240	725
	2450	4	4000	50	30	253	160	725
•		5	4000	50	30	253	200	725
•		6	4000	50	30	253	240	725
•*	2500	4	4200	50	30	260	175	806
•		5	4200	50	30	260	215	806
•		6	4200	50	30	261	260	810
•		7	4200	50	40	272	303	862
•		8	4200	50	40	272	350	862
•		10	4200	50	50	284	440	918
	3000	4	5400	50	30	283	252	1246
•		5	5400	50	30	283	315	1246
•		6	5400	50	30	284	378	1251
•		7	5400	50	40	295	441	1327
•		8	5400	50	40	295	508	1327
•		10	5400	50	50	302	640	1409
•		12	5400	50	50	308	760	1414
•		15	5400	50	60	321	970	1501
•		18	5400	50	60	323	1160	1512
•		20	5400	50	60	324	1300	1518
	3500	4	6200	100	30	360	347	2232
•		5	6200	100	30	360	434	2232
•		6	6200	100	30	361	521	2238
•		8	6200	100	40	373	700	2349
•		10	6200	100	50	384	870	2450
•		12	6200	100	50	386	1050	2465
•		15	6200	100	60	398	1320	2573
•		18	6200	100	60	400	1575	2587
•		20	6200	100	60	401	1760	2592
•		24	6200	100	60	404	2130	2614
	4000	5	6800	120	30	423	570	3396
•		6	6800	120	30	424	690	3406
•		8	6800	120	40	435	925	3539
•		10	6800	120	50	447	1170	3683
•		12	6800	120	50	448	1380	3691
•		15	6800	120	60	460	1730	3832
•		18	6800	120	60	462	2080	3849

LEGEND:

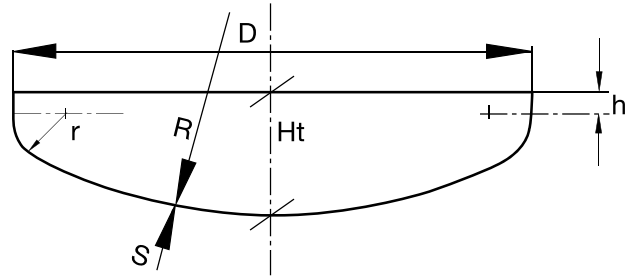
• Dished heads generally available in stock (sold excepted) made in carbon steel

* Dished heads generally available in stock (sold excepted) made in stainless steel.

Dished heads highlighted are press-formed

Dished head type E

Torispherical heads
 $R=D$ $r=D/10$



	D	s	R	r	h	Ht	Kg.	V
••	320	1.5	400	30	20	75	1.5	4
•		2	400	30	20	75	2	4
••		3	400	30	20	75	3	4
••		4	400	30	20	75	4	4

•	350	1.5	350	30	20	83	1.5	6
•		2	350	30	20	85	2	6
••		3	350	30	20	90	3.5	6
••		4	350	30	20	90	4.5	6

	380	3	400	38	20	89	3.8	7
		4	400	38	20	89	5	7

•	400	1.5	400	35	20	92	2	8
•		2	400	35	20	95	3	8
		3	400	35	20	95	4	8
		4	400	35	20	97	6	8

•	450	2	450	35	20	97	3.5	11
••		3	450	35	20	103	5.5	11
*		4	450	34	20	104	7	11
		5	450	35	20	105	9	11

•	500	2	500	40	20	112	4.5	15
•		2.5	500	40	20	112	5.5	15
••		3	500	40	20	116	6	15
••		4	500	40	20	119	9	15
•		5	500	40	20	119	11	15

	508	2	500	50	20	115	4.5	15
		3	500	50	20	115	6	15

	530	1.5	530	53	20	125	4	18
		2	530	53	20	125	5	18

•	550	2	550	55	20	127	5.5	21
••		3	550	55	20	128	7.5	21
•		4	550	55	20	130	10.5	21
		5	550	55	20	130	13.5	21

•	600	2	600	40	30	135	6	26
••		3	600	40	30	135	9	26
••		4	600	40	30	136	12	26
•		5	600	40	30	136	16	26
		6	600	60	30	149	18	26

••	650	3	650	40	30	138	10.5	32
•		4	650	40	30	141	14	32
•		5	650	65	30	145	18	32
•		6	650	65	30	159	23	37

•	700	2	700	50	20	146	8	37
••		3	700	50	30	153	12	41
•		4	700	50	30	154	16	41
		5	700	50	30	157	20	41
		6	700	70	30	168	26	45

	D	s	R	r	h	Ht	Kg.	V
••	750	3	750	75	20	166	14	50
•		4	750	75	20	167	18	50
		5	750	75	30	172	24	54
		6	750	75	30	178	29	54

	790	3	790	79	30	180	15	63
		4	790	79	30	180	20	63

••	800	3	800	80	30	183	16	65
••		4	800	80	30	184	22	65
•		5	800	80	30	185	27	65
•		6	800	80	30	188	32	65

•	850	3	850	85	30	190	18	77
		4	850	85	30	192	24	77
		5	850	85	30	194	30	77
		6	850	85	30	197	37	77

••	900	3	900	90	40	212	20	96
••		4	900	90	40	213	27.5	96
•		5	900	90	40	213	34	96
		6	900	90	40	217	41	96

••	950	3	950	95	40	219	23	112
••		4	950	95	40	219	30	112
•		5	950	95	40	222	37	112
		6	950	95	40	227	46	112

••	1000	3	1000	100	40	230	25	129
••		4	1000	100	40	230	33	129
•		5	1000	100	40	230	42	129
		6	1000	100	40	236	51	129

	1050	3	1050	105	30	228	25	139
•		4	1050	105	30	229	37	139
•		5	1050	105	30	229	46	139
		6	1050	105	30	231	56	139

•	1100	3	1100	110	30	242	30	159
•		4	1100	110	30	242	39	159
•		5	1100	110	30	242	50	159
•		6	1100	110	30	246	61	159

	1150	3	1150	115	30	244	32	180
•		4	1150	115	30	244	44	180
•		5	1150	115	30	244	55	181
		6	1150	115	30	244	66	183

	1200	3	1200	120	30	265	36	203
•		4	1200	120	30	265	48	203
•		5	1200	120	30	265	58	203
•		6	1200	120	30	265	72	203

•	1250	3	1250	125	40	280	39	240
•		4	1250	125	40	280	52	240
•		5	1250	125	40	280	65	240
		6	1250	125	40	285	74	240

• These tables show the most common sizes. Intermediate sizes or diameters up to 5000 mm and thicknesses up to 32 mm can also be made.

• Height, weight and volume are theoretical values and as such are merely indicative and must not be taken as a basis for the contract.

	D	s	R	r	h	Ht	Kg.	V
•	1300	4	1300	130	40	290	56	267
•		5	1300	130	40	290	70	267
•		6	1300	130	40	290	84	267

•	1350	4	1350	135	40	290	61	286
•		5	1350	135	40	290	76	286
•		6	1350	135	40	290	91	286

	1400	3	1400	140	40	311	48	330
•		4	1400	140	40	311	65	330
•		5	1400	140	40	311	82	330
•		6	1400	140	40	311	96	330

•	1500	4	1500	150	40	330	75	400
•		5	1500	150	40	330	93	400
•		6	1500	150	40	330	112	400
•		8	1500	150	40	334	150	400

•	1600	4	1600	160	40	350	85	481
•		5	1600	160	40	350	106	481
•		6	1600	160	40	350	130	481
•		7	1600	160	40	354	150	481
•		8	1600	160	40	354	173	481

•	1700	5	1700	170	50	379	120	592
•		6	1700	170	50	379	145	592
•		7	1700	170	50	380	169	592
•		8	1700	170	50	380	193	592

•	1750	5	1750	175	50	392	124	642
•		6	1750	175	50	392	148	642
•		7	1750	175	50	392	172	642
•		8	1750	175	50	392	197	642

•	1800	5	1800	180	40	391	135	672
•		6	1800	180	50	396	163	696
•		7	1800	180	50	398	190	696
•		8	1800	180	50	398	217	696

•	1900	5	1900	190	50	430	153	826
•		6	1900	190	50	430	184	826
•		7	1900	190	50	430	214	826
•		8	1900	190	50	430	244	826

•	2000	5	2000	200	50	446	170	941
•		6	2000	200	50	446	204	941
•		7	2000	200	50	446	238	941
•		8	2000	200	50	446	275	941

	2100	5	2100	210	40	450	182	1044
		6	2100	210	40	450	218	1044
		7	2100	210	50	460	255	1078
		8	2100	210	50	460	291	1078

	2200	5	2200	220	40	470	199	1192
•		6	2200	220	40	470	238	1192
		7	2200	220	50	480	278	1230
		8	2200	220	50	480	318	1230

	D	s	R	r	h	Ht	Kg.	V
	2300	5	2300	230	40	490	217	1357
		6	2300	230	40	490	260	1357
		7	2300	230	50	500	303	1398
		8	2300	230	50	500	347	1398

	2400	5	2400	240	40	505	236	1533
		6	2400	240	40	505	283	1533
		7	2400	240	50	520	330	1577
		8	2400	240	50	520	377	1577
		10	2400	240	50	520	480	1577

	2500	5	2500	250	40	525	255	1723
		6	2500	250	40	525	306	1723
		7	2500	250	50	540	357	1771
		8	2500	250	50	540	408	1771
		10	2500	250	50	540	510	1771
		12	2500	250	50	540	612	1771

	3000	5	3000	300	40	620	365	2923
		6	3000	300	40	620	438	2923
		7	3000	300	50	635	511	2993
		8	3000	300	50	635	584	2993
		10	3000	300	50	635	730	2993
		12	3000	300	50	635	880	2993
		15	3000	300	60	650	1100	3061
		18	3000	300	60	650	1320	3061
		20	3000	300	60	650	1460	3061

	3500	5	3500	350	40	720	500	4580
		6	3500	350	40	720	600	4580
		7	3500	350	50	730	700	4675
		8	3500	350	50	730	800	4675
		10	3500	350	50	730	1000	4675
		12	3500	350	50	730	1206	4675
		15	3500	350	60	745	1510	4770
		18	3500	350	60	745	1815	4770
		20	3500	350	60	745	2015	4770

	4000	5	4000	400	40	815	650	6770
		6	4000	400	40	815	780	6770
		7	4000	400	50	830	910	6900
		8	4000	400	50	830	1040	6900
		10	4000	400	50	830	1306	6900
		12	4000	400	50	830	1570	6900
		15	4000	400	60	840	1965	7016
		18	4000	400	60	840	2360	7016
		20	4000	400	60	840	2625	7016

LEGEND:

• Dished heads generally available in stock (sold excepted) made in carbon steel

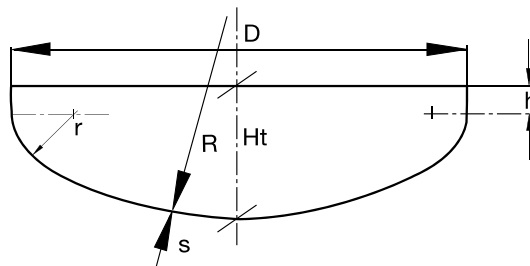
★ Dished heads generally available in stock (sold excepted) made in stainless steel.

Dished heads highlighted are press-formed

Dished head type F

Semielliptical heads

$R=0,8xD$ $r=D/6,5$



	D	s	R	r	h	Ht	Kg.	V
	400	2	320	60	30	136	3,5	12
		3	320	60	30	136	5	12

	450	2	360	70	30	150	4	17
		3	360	70	30	150	6	17
		4	360	70	30	150	8	17

	500	3	400	76	30	155	7	22
		4	400	76	30	155	10	22
		5	400	76	30	155	12	22

	550	3	440	84	30	170	9	28
		4	440	84	30	170	12	28
		5	440	84	30	170	15	28

•	600	3	480	90	30	180	10	35
		4	480	90	30	180	14	35
		5	480	90	30	180	17	35

•	650	3	520	100	30	196	12	45
		4	520	100	30	196	16	45
		5	520	100	30	196	20	45
		6	520	100	30	197	22	45
		8	520	100	30	198	32	45

	700	3	560	110	30	210	13	55
		4	560	110	30	210	18	55
		5	560	110	30	211	22	55
		6	560	110	30	211	26	55
	8	560	110	30	212	36	55	

	750	3	600	115	30	220	15	67
		4	600	115	30	220	20	67
		5	600	115	30	220	25	67
		6	600	115	30	222	30	67
		8	600	115	30	223	40	67

	790	3	632	120	30	230	18	82
		4	632	120	30	230	24	82
		5	632	120	30	230	30	82

•	800	3	640	141	35	250	19	87
		4	640	141	35	250	25	87
		5	640	141	35	250	31	87
		5,5	640	141	35	250	34	87
		6	640	141	35	250	36	87
		7	640	141	35	250	42	87
		7,5	640	141	35	250	45	87
		8	640	123	30	237	44	80
		10	640	123	30	237	56	80
		12	640	123	30	237	66	80

	850	3	680	130	30	245	20	95
		4	680	130	30	245	27	95
		5	680	130	30	245	34	95
		6	680	130	30	247	39	95
		8	680	130	30	247	52	95
		10	680	130	40	259	64	99
12	680	130	50	270	78	104		

	900	4	720	140	30	261	30	112
		5	720	140	30	261	37	112
		6	720	140	30	261	45	112
		8	720	140	30	261	60	112
		10	720	140	40	273	74	117
		12	720	140	50	284	90	123

	950	4	760	145	30	272	34	130
		5	760	145	30	272	42	130
		6	760	145	30	272	51	130
		8	760	145	30	272	68	130
		10	760	145	40	284	85	136
		12	760	145	50	295	105	142

•	1000	4	800	175	45	313	39	170
		5	800	175	45	313	50	170
		5,5	800	175	45	313	52	170
		6	800	175	45	313	78	170
		8	800	175	45	313	78	170
		10	800	153	40	297	95	157
		12	800	153	50	310	145	163
		15	800	153	50	310	145	163
	18	800	153	50	310	173	163	
		20	800	153	50	310	200	163

	1100	5	880	170	30	312	55	200
		6	880	170	30	312	72	200
		8	880	170	30	313	96	200
		10	880	170	40	324	120	207
		12	880	170	50	336	150	214
		15	880	170	50	336	190	214
		18	880	170	50	338	230	214
		20	880	170	50	338	260	214

•	1200	4	900	193	65	390	54	305
		5	900	193	65	390	70	305
		5,5	900	193	65	390	78	305
		6	900	193	65	390	82	305
		6,5	900	193	65	390	96	305
		8	960	184	30	337	105	253
		10	960	184	40	348	130	263
		12	960	184	50	360	160	270
		15	960	184	50	360	200	270
		18	960	184	50	360	235	270
		20	960	184	50	360	270	270
		22	960	184	50	360	290	270

	1250	4	1000	192	30	365	60	285
		5	1000	192	30	365	75	285
		6	1000	192	30	365	90	285
		8	1000	190	30	348	120	285
		10	1000	190	40	360	150	295
		12	1000	190	50	372	190	305
		15	1000	190	50	372	230	305
		18	1000	190	50	372	280	305
		20	1000	190	50	375	310	305
		22	1000	190	50	375	340	305

	1300	5	1040	200	30	362	78	320
		6	1040	200	30	362	100	320
		8	1040	200	30	362	132	320
		10	1040	200	40	374	165	333
		12	1040	200	50	385	200	342
		15	1040	200	50	385	250	342
		18	1040	200	50	385	300	342
		20	1040	200	50	385	335	343
22	1040	200	50	385	370	343		

	1400	5	1120	215	30	388	90	397
		6	1120	215	30	388	115	397
		8	1120	215	30	388	150	397
		10	1120	215	40	399	190	410
		12	1120	215	50	410	230	422

• These tables show the most common sizes. Intermediate sizes or diameters up to 4000 mm and thicknesses up to 32 mm can also be made.

• Height, weight and volume are theoretical values and as such are merely indicative and must not be taken as a basis for the contract.

	D	s	R	r	h	Ht	Kg.	V
	1400	15	1120	215	50	410	290	422
		18	1120	215	50	410	350	422
		20	1120	215	50	413	390	422
		22	1120	215	50	413	420	422

	D	s	R	r	h	Ht	Kg.	V
	1500	5	1200	230	30	414	103	485
		6	1200	230	30	414	126	485
		8	1200	230	30	414	170	485
		10	1200	230	40	424	210	500
		12	1200	230	50	435	255	515
		15	1200	230	50	435	320	515
		18	1200	230	50	435	390	515
		20	1200	230	50	440	430	515
22	1200	230	50	440	470	515		

	D	s	R	r	h	Ht	Kg.	V
	1600	5	1280	245	30	438	118	585
		6	1280	245	30	438	144	585
		8	1280	245	30	438	192	585
		10	1280	245	40	450	240	600
		12	1280	245	50	462	290	620
		15	1280	245	50	462	370	620
		18	1280	245	50	462	440	620
		20	1280	245	50	464	490	620
22	1280	245	50	464	540	620		

	D	s	R	r	h	Ht	Kg.	V
	1700	5	1360	260	30	463	131	697
		6	1360	260	30	463	160	697
		8	1360	260	30	463	220	697
		10	1360	260	40	475	265	716
		12	1360	260	50	487	320	735
		15	1360	260	50	487	400	735
		18	1360	260	50	487	510	735
		20	1360	260	50	489	540	735
22	1360	260	50	489	590	735		

	D	s	R	r	h	Ht	Kg.	V
	1800	5	1440	276	40	500	147	850
		6	1440	276	40	500	180	850
		8	1440	276	40	500	240	850
		10	1440	276	50	513	300	870
		12	1440	276	50	513	370	870
		15	1440	276	50	513	460	870
		18	1440	276	50	513	550	870
		20	1440	276	50	515	620	870
22	1440	276	50	515	680	870		

	D	s	R	r	h	Ht	Kg.	V
	1900	5	1520	293	40	525	165	995
		6	1520	293	40	525	200	995
		8	1520	293	40	525	280	995
		10	1520	293	50	537	340	1020
		12	1520	293	50	537	410	1020
		15	1520	293	50	537	520	1020
		18	1520	293	50	537	620	1020
		20	1520	293	50	540	700	1020
22	1520	293	50	540	760	1020		

	D	s	R	r	h	Ht	Kg.	V
	2000	5	1600	310	40	551	188	1155
		6	1600	310	40	551	230	1155
		8	1600	310	40	551	305	1155
		10	1600	310	50	564	380	1180
		12	1600	310	50	564	460	1180
		15	1600	310	50	564	580	1180
		18	1600	310	50	564	690	1180
		20	1600	310	50	568	780	1180
22	1600	310	50	568	850	1180		

	D	s	R	r	h	Ht	Kg.	V
	2100	5	1680	323	40	576	203	1330
		6	1680	323	40	576	250	1330
		8	1680	323	40	576	340	1330
		10	1680	323	50	588	410	1350
		12	1680	323	50	588	500	1350
		15	1680	323	50	588	620	1350
		18	1680	323	50	590	760	1350
		20	1680	323	50	590	850	1350
22	1680	323	50	590	920	1350		

	D	s	R	r	h	Ht	Kg.	V
	2200	5	1760	340	40	602	220	1523
		6	1760	340	40	602	270	1523
		8	1760	340	40	602	360	1523
		10	1760	340	50	615	450	1555
		12	1760	340	50	615	550	1555
		15	1760	340	50	615	680	1555
		18	1760	340	50	618	820	1555
		20	1760	340	50	618	910	1555
22	1760	340	50	618	1000	1555		

	D	s	R	r	h	Ht	Kg.	V
	2400	5	1920	370	40	652	254	1960
		6	1920	370	40	652	305	1960
		8	1920	370	40	652	410	1960
		10	1920	370	50	665	510	1995
		12	1920	370	50	665	620	1995
		15	1920	370	50	665	770	1995
		18	1920	370	50	668	930	1995
		20	1920	370	50	668	1030	1995
22	1920	370	50	668	1140	1995		

	D	s	R	r	h	Ht	Kg.	V
	2500	5	2000	385	40	678	282	2205
		6	2000	385	40	678	340	2205
		8	2000	385	40	678	455	2205
		10	2000	385	50	690	570	2240
		12	2000	385	50	690	690	2240
		15	2000	385	50	690	860	2240
		18	2000	385	50	693	1040	2240
		20	2000	385	50	693	1155	2240
22	2000	385	50	693	1270	2240		

	D	s	R	r	h	Ht	Kg.	V
	3000	5	2400	460	50	815	392	3825
		6	2400	460	50	815	480	3825
		8	2400	460	50	815	640	3825
		10	2400	460	50	816	790	3825
		12	2400	460	60	826	960	3870
		15	2400	460	60	826	1195	3870
		18	2400	460	60	830	1440	3870
		20	2400	460	60	830	1600	3870
22	2400	460	60	830	1760	3870		

	D	s	R	r	h	Ht	Kg.	V
	4000	6	3200	615	50	1070	890	8860
		8	3200	615	50	1070	1170	8860
		10	3200	615	50	1070	1461	8860
		12	3200	615	60	1083	1760	8950
		15	3200	615	60	1083	2200	8950
		18	3200	615	60	1083	2650	8950
		20	3200	615	60	1083	2940	8950
		22	3200	615	60	1083	3240	8950
24	3200	615	60	1083	3530	8950		

LEGEND:

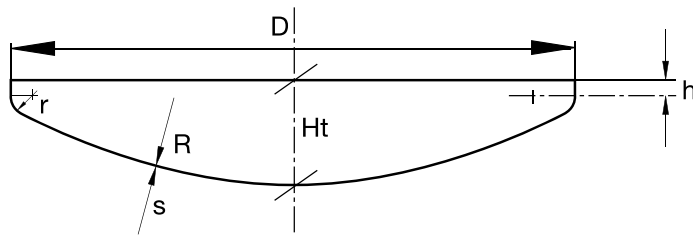
● Dished heads generally available in stock (sold excepted) made in carbon steel

Dished heads highlighted are press-formed

Dished head type DE

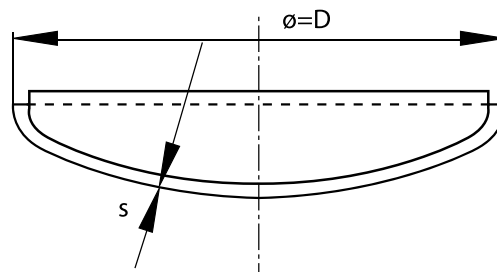
Medium radius heads

$$R=D \quad r=50 \div 180$$



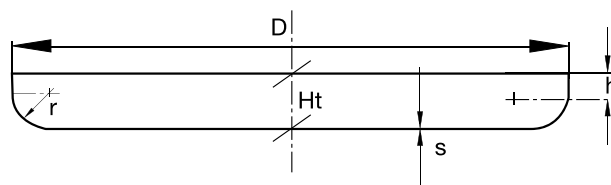
	D	s	R	r	h	Ht	Kg.	V
	950	3	950	50	30	190	24	88
		4	950	50	30	190	32	88
		5	950	50	30	190	40	88
	1250	3	1250	50	30	230	40	178
		4	1250	50	30	230	52	178
		5	1250	50	30	230	65	178
	1500	4	1500	50	30	260	73	290
		5	1500	50	30	260	90	290
	1900	5	1900	70	30	330	142	570
		6	1900	70	30	330	170	570
	2500	6	2500	95	30	423	290	1260
	3000	6	3000	180	30	540	420	2390

Double walled tanks heads



	D	s	R	r	h	Ht	Kg.	V
	1258	3	1250	50	30	230	40	180
	1508	3	1500	50	30	265	55	290
	1908	3	1900	70	30	330	85	580
	2512	5	2500	95	30	425	240	1280
	3012	5	3000	180	30	545	350	2420

Pressed Type B heads



	D	s	r	h
	320	1,5 ÷ 4	30	height of the straight flange according to request of the customer
	350	1,5 ÷ 3	30	
	400	1,5 ÷ 3	20	
		4	30	
	450	1,5 ÷ 4	20	
	500	1,5 ÷ 4	20	
		1,5 ÷ 4	20	
	550	1,5 ÷ 4	20	
	600	1,5 ÷ 4	20	
		1,5 ÷ 3	10	
			30	
			50	

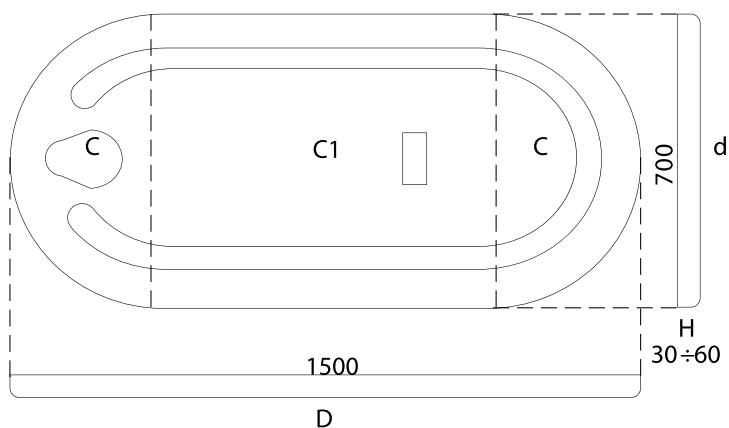
	D	s	r	h
	700	1,5 ÷ 4	20	height of the straight flange according to request of the customer
			50	
	750	1,5 ÷ 3	50	
	800	1,5 ÷ 4	30	
			50	
	900	1,5 ÷ 3	10	
			30	
	950	1,5 ÷ 3	30	
	1000	1,5 ÷ 3	30	

The indications for the height of the straight flange (h) and the total height (Ht) can be customised and have to be communicated by raising a request.

Oblong head

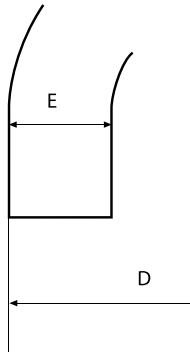
Standard 700x1500x2

D = 1500
 d = 700
 C = 350
 C1 = 800
 perimeter = 3800
 area m² = 0,945
 thickness = 2 ÷ 3,3 mm
 H = 30 ÷ 60 (on request)

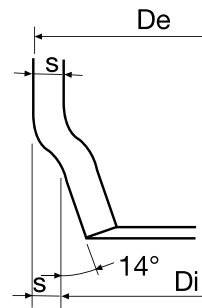


Edge bevelling types

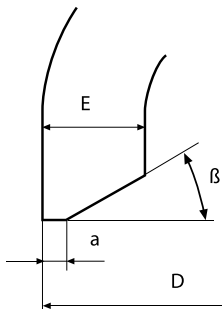
TF1



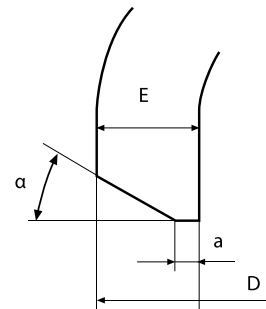
TF2



TF3

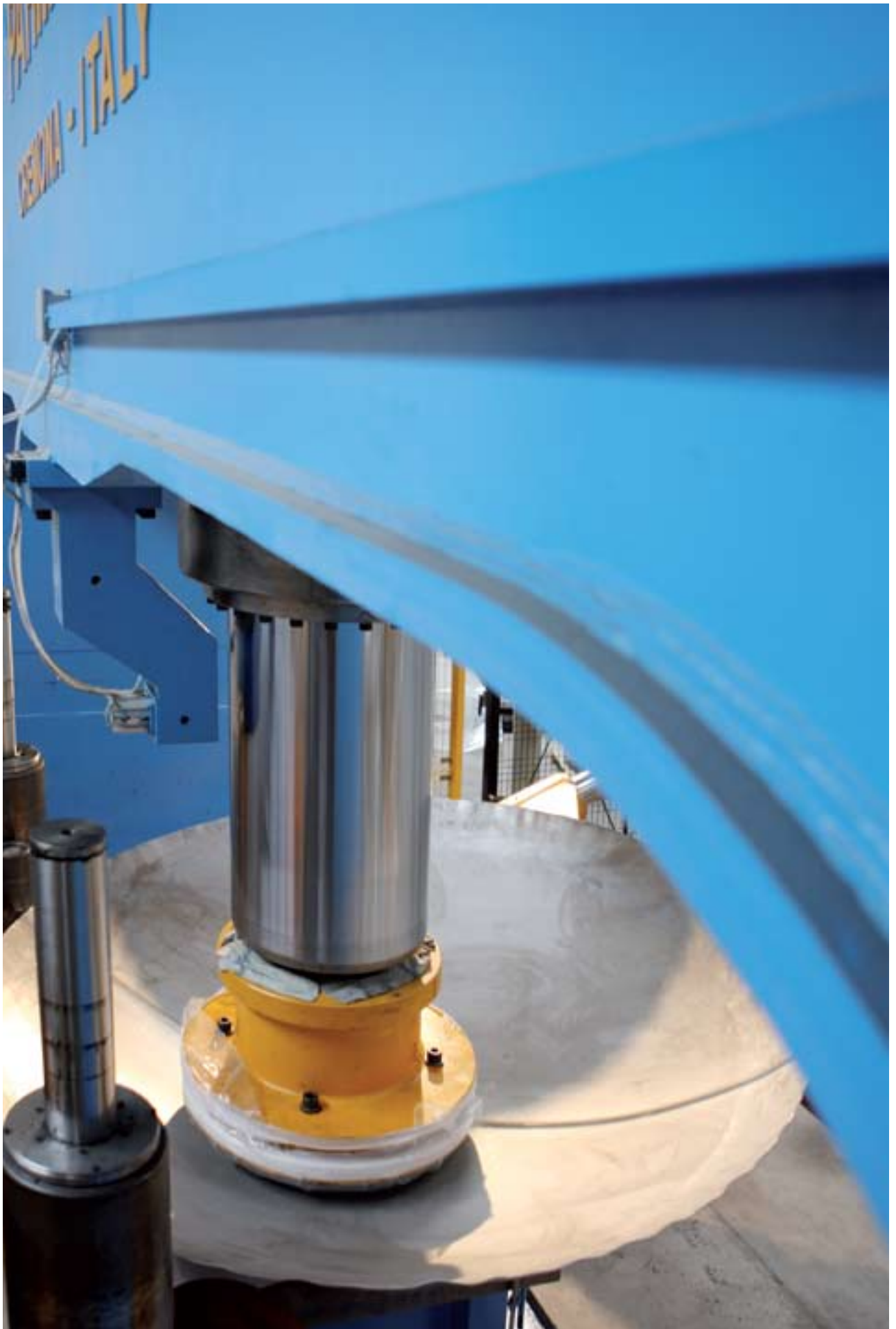


TF4



- The heads available in stock are formed with flat edge (TF1), for heads with a different edge, you kindly would specify to our customer office.
- The above drawings are not to scale and should be taken purely as an example.

- The edge TF2 is shown in its standard version, but it can also be made to satisfy different exigences
- Our technical department is available to contemplate also other types of edge bevelling or edge trimming according to drawings and needs of the customer.





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