

## PROTISOL SLEEVES

One of the main conditions to be complied with for the obtaining of sound castings, in a foundry, is the correct compensation of the volumetric shrinkage that the alloys undergo in passing from the liquid to the solid state. This compensation is made by placing, in suitable positions inside the mould, some reserves of molten metal (feeder heads), from which the metal flows to the areas of the casting that are solidifying. At the end of solidification, as consequence of a correct feeding, a sound casting is obtained, while the shrinkage concentrates in the feeder heads, which are removed and, normally, re-melted.

With the purpose of allowing a more economic management of the foundries, PROTECME SPA propose the employ of their PROTISOL sleeves, as auxiliary items for the feeding of castings.

PROTISOL sleeves have a low density and are used to coat feeder heads, in order to reduce the heat losses. The effect of the thermal insulation produces an increase of the effectiveness of feeder heads and the possibility to reduce their dimensions, with obvious advantages.

The use of PROTISOL sleeves involves:

- Facility of application
- Increase of the yield of the cast alloy
- Reduction of fettling costs, and of costs in general

PROTISOL sleeves are supplied in a wide range of forms and dimensions, for different applications.

The choice of the pieces to be used can be made by consulting the following tables.

## TAPPI PROTISOL

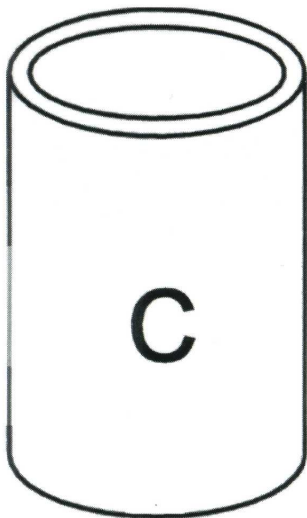
Ceramic fibre stoppers for the tapping nozzles of light alloys reverberatory furnaces.

Fit perfectly making optimum tightness.

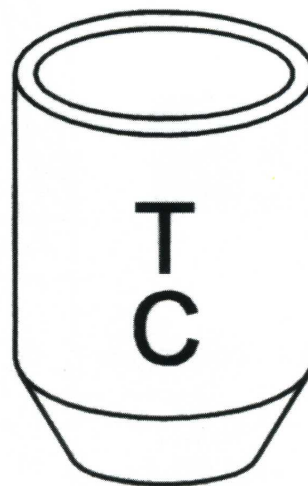
**MANICOTTI ISOLANTI PER GETTI IN LEGHE DI ALLUMINIO, LEGHE DI RAME, GHISA**  
**INSULATING SLEEVES FOR ALUMINIUM ALLOYS, COPPER ALLOYS AND IRON CASTINGS**

**SERIE 100 - 200 - 300**

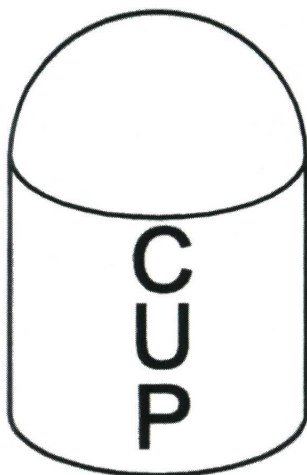
**100 - 200 - 300 TYPES**



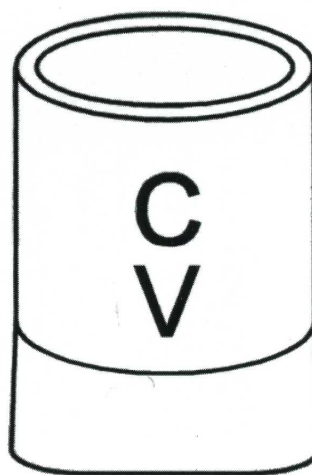
- CILINDRICO -  
- CYLINDRICAL -



- TRONCO CONICO -  
- NARROW-NECKED -



- A CUPOLA -  
- DOMED -

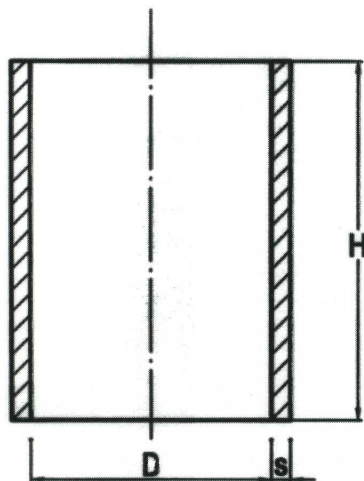


- OVALE STROZZATO -  
- OVAL NARROW-NECKED -

## PROTISOL

Manicotti cilindrici  
 Cylindrical sleeves

**TIPO**



**C**

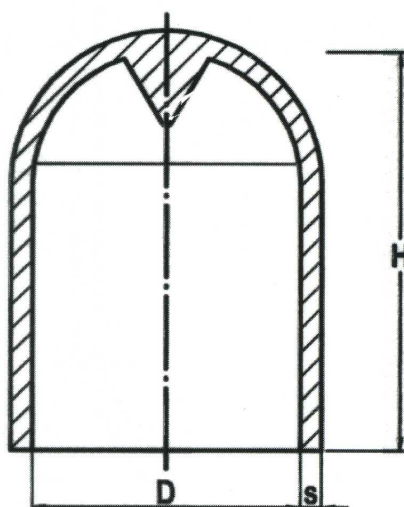
CODICE CODE	TIPO TYPE	MODULO GEOM. GEOM. MODULUS	DIMENSIONI NOMINALI INTERNE (mm) INNER NOMINAL DIMENSIONS (mm)			VOLUME  dm <sup>3</sup>	PEZZI PER SCATOLA PIECES PER CARTON	PEZZI PER PALLET PIECES PER PALLET
			D	H	s			
		cm	D	H	s	dm <sup>3</sup>	n°	n°
320.001	<b>C 1</b>	0.88	40	150	8	0.19	320	3840
320.002	<b>C 2</b>	1.25	60	150	8	0.42	168	2016
320.003	<b>C 3</b>	1.57	80	150	8	0.75	100	1200
320.004	<b>C 4</b>	1.88	100	150	8	1.18	76	912
320.005	<b>C 5</b>	2.14	120	150	10	1.70	48	576
320.006	<b>C 6</b>	2.59	140	200	10	3.08	27	324
320.007	<b>C 7</b>	2.86	160	200	12	4.02	24	288
320.008	<b>C 8</b>	3.10	180	200	12	5.09	18	216
320.009	<b>C 9</b>	3.33	200	200	13	6.28	15	160
320.010	<b>C 10</b>	3.85	250	200	14	9.82	9	128
320.011	<b>C 11</b>	4.29	300	200	17	14.14		88
	<b>C 12</b>	4.67	350	200	17	19.24		64
	<b>C 13</b>	5.00	400	200	20	25.13		48
	<b>C 14</b>	5.29	450	200	24	31.81		40
	<b>C 15</b>	5.56	500	200	24	39.27		32

Per il massimo rendimento si raccomanda l'applicazione di una adatta polvere di copertura sulla superficie libera delle materozze aperte  
 For a better yield we recommend the application of suitable anti piping compounds on the surface of the feeder heads exposed to the air.

## PROTISOL

Manicotti a cupola  
 Domed sleeves

**TIPO**

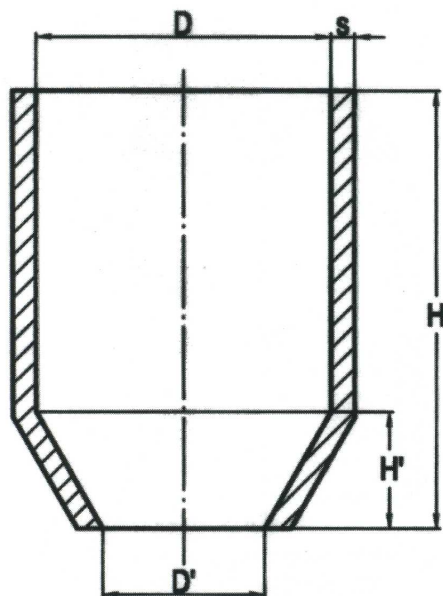


**CUP**

CODICE CODE	TIPO TYPE	MODULO GEOM. GEOM. MODULUS	DIMENSIONI NOMINALI INTERNE (mm) INNER NOMINAL DIMENSIONS (mm)			VOLUME  dm <sup>3</sup>	PEZZI PER SCATOLA PIECES PER CARTON	PEZZI PER PALLET PIECES PER PALLET
			D	H	s			
		cm	D	H	s	dm <sup>3</sup>	n°	n°
320.101	<b>CUP 1</b>	1.02	50	100	8	0.18	280	3360
320.102	<b>CUP 2</b>	1.22	60	120	8	0.31	210	2520
320.103	<b>CUP 3</b>	1.52	80	120	8	0.54	150	1800
320.104	<b>CUP 4</b>	1.52	100	150	8	1.05	64	768
320.105	<b>CUP 5</b>	2.17	120	150	10	1.47	48	576
320.106	<b>CUP 6</b>	2.55	140	180	10	2.41	27	324
320.107	<b>CUP 7</b>	2.89	160	200	12	3.49	24	288
320.108	<b>CUP 8</b>	3.27	180	230	12	5.09	12	144
320.109	<b>CUP 9</b>	3.51	200	230	13	6.18	10	120
320.110	<b>CUP 10</b>	3.72	225	230	14	7.65	6	72
	<b>CUP 11</b>	4.62	300	250	17	14.14	6	72

# PROTISOL

Manicotti tronco conici  
 Narrow-necked sleeves



**TIPO**

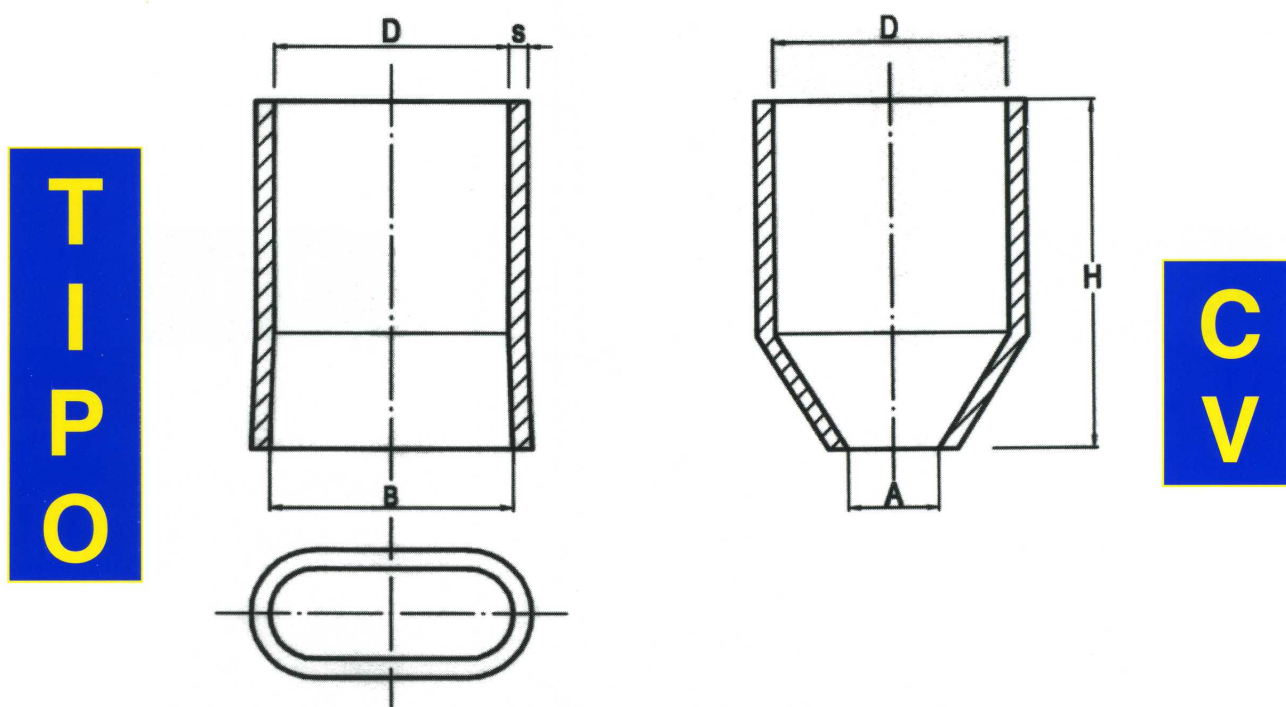
**TC**

CODICE CODE	TIPO TYPE	MODULO GEOM. GEOM. MODULUS	DIMENSIONI NOMINALI INTERNE (mm) INNER NOMINAL DIMENSIONS (mm)					VOLUME	PEZZI PER SCATOLA PER CARTON	PEZZI PER PALLET PER PALLET
			D	D'	H	H'	s			
		cm	D	D'	H	H'	s		N°	n°
320.301	TC 2	1.12	60	27	90	30	8	0.22	294	3528
320.302	TC 3	1.58	80	45	150	40	8	0.68	100	1200
320.303	TC 4	1.89	100	55	150	40	8	1.06	64	768
320.304	TC 5	2.17	120	65	150	40	10	1.52	48	576
320.305	TC 6	2.85	140	80	200	40	10	2.85	27	324
320.306	TC 7	2.91	160	90	200	40	12	3.72	24	288
320.307	TC 8	3.17	180	110	200	40	12	4.74	18	216
320.308	TC 9	3.39	200	120	200	50	13	5.74	15	180
	TC 10	3.90	250	155	200	60	14	8.84	9	108

Per il massimo rendimento si raccomanda l'applicazione di una adatta polvere di copertura sulla superficie libera delle materozze aperte.  
 For a better yield we recommend the application of suitable anti piping compounds on the surface of the feeder heads exposed to the air.

## PROTISOL

Manicotti strozzati ovali  
 Oval narrow-necked sleeves

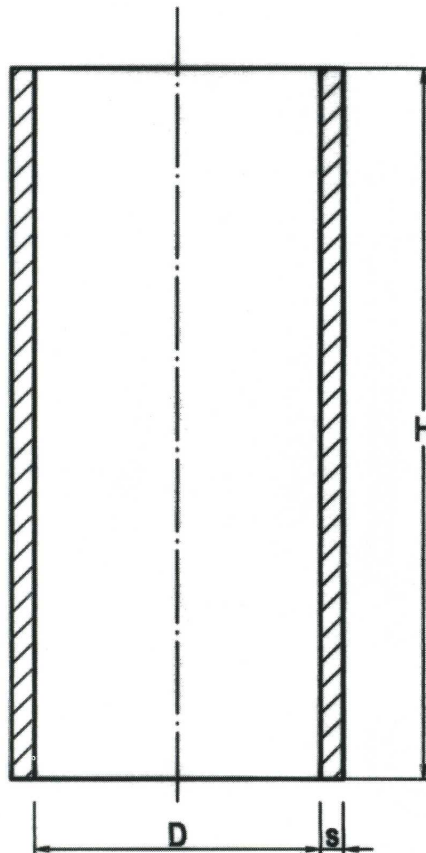


CODICE CODE	TIPO TYPE	MODULO GEOM. GEOM. MODULUS	DIMENSIONI NOMINALI INTERNE (mm) INNER NOMINAL DIMENSIONS (mm)					VOLUME  dm <sup>3</sup>	PEZZI PER SCATOLA PIECES PER CARTON	PEZZI PER PALLET PIECES PER PALLET
			D	A	B	H	s			
		cm	D	A	B	H	s	dm <sup>3</sup>		n°
320.201	CV 1	0.88	40	25	45	150	8	0.175	320	3840
320.202	CV 2	1.35	60	35	70	150	8	0.395	168	2016
320.203	CV 3	1.57	80	45	95	150	8	0.700	100	1200
320.204	CV 4	1.84	100	55	120	150	8	1.100	64	768
320.205	CV 5	2.14	120	65	145	150	10	1.560	48	576
320.206	CV 6	2.59	140	75	170	200	10	2.770	27	324
320.207	CV 7	2.85	160	85	195	200	12	3.620	24	288
320.208	CV 8	310	180	95	220	200	12	4.580	18	216

Per il massimo rendimento si raccomanda l'applicazione di una adatta polvere di copertura sulla superficie libera delle materozze aperte.  
 For a better yield we recommend the application of suitable anti piping compounds on the surface of the feeder heads exposed to the air.

Manicotti cilindrici bianchi  
White cylindrical sleeves

**TIPO**

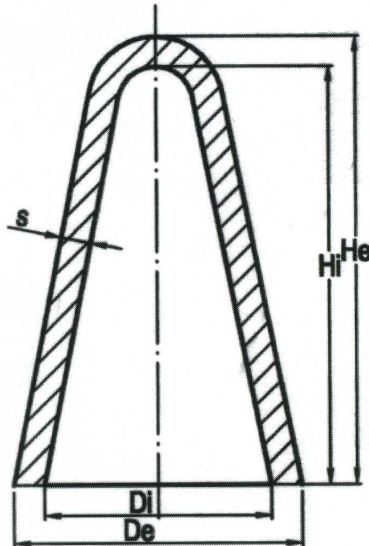


**TR**

CODICE CODE	TIPO TYPE	MODULO GEOM. GEOM. MODULUS	DIMENSIONI NOMINALI INTERNE (mm) INNER NOMINAL DIMENSIONS (mm)			VOLUME  dm <sup>3</sup>	PEZZI PER SCATOLA PIECES PER CARTON  n°	PEZZI PER PALLET PIECES PER PALLET  n°
			cm	D	H			
350.101	TR 20		20	300	10		300	
350.103	TR 40		40	300	10		125	
350.105	TR 60		60	300	10		70	
350.107	TR 80		80	300	10		48	
350.110	TR 100		100	300	10		32	
350.111	TR 120		120	300	12		24	
350.113	TR 140		140	300	12		18	
350.115	TR 160		160	300	12		12	

Per il massimo rendimento si raccomanda l'applicazione di una adatta polvere di copertura sulla superficie libera delle materozze aperte.  
For a better yield we recommend the application of suitable anti piping compounds on the surface of the feeder heads exposed to the air.

## TAPPI - STOPPERS



TIPO-ty'pe	CODICE-code	Di	De	Hi	He	s
1	790.001	45	65	160	170	10
2	790.002	75	95	140	150	10
3	790.003	75	95	95	105	10
3 (A)	(790.003.A)	106	126	165	175	10
4	790.004	70	90	160	170	10
5	790.005	35	55	150	160	10
6	790.006	60	80	190	200	10
8	790.008	75	95	140	150	10
9	790.009	75	95	135	145	10
10	790.010	79	103	135	147	12
10 SP.25	790.010.A	79	129	135	155	25
11	790.011	75	99	140	152	12
14	790.014	95	120	137,5	150	12,5
15	790.015	75	95	140	150	10
16	790.016	82	102	200	210	10
17		50	80	180	195	15
18	790.018	45	65	190	200	10
20	790.020	54	74	102	112	10
21	790.021	60	84	190	212	12
22	790.022	56	76	150	160	10
23	790.023	116	136	155	165	10
24	790.024	100	120	180	190	10
25	790.025	50	70	120	130	10
26	790.026	80	100	173	183	10
27	790.027	75	95	175	185	10
28	790.028	106	116	165	175	10
29	790.029	145	180	210	227,5	17,5
30		55	75	170	180	10
31		75	95	150	160	10
32		60	80	150	160	10
33		87	107	185	195	10