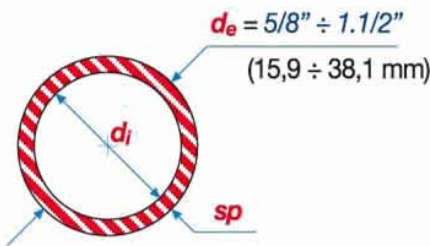


Per piastre tubiere di grosso spessore

For thick tube-sheets

Pour plaques tubulaires de grande épaisseur

Für Rohrböden mit großer Stärke



$RE_{min} = 1.1/8" (28,6 \text{ mm})$

$RE_{max} = 6.3/4" (171,5 \text{ mm})$

Codice d'esempio per ordinazione mandrini

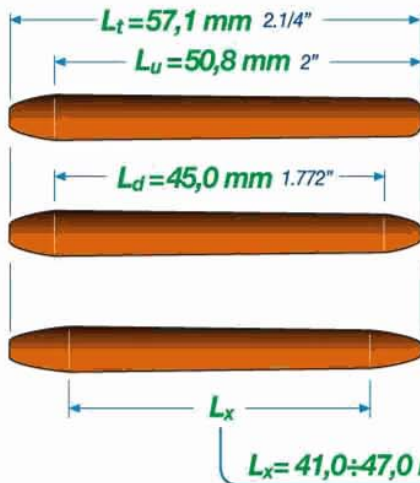
Sample code for ordering tube expanders
Code d'exemple pour commande dudgeons
Bestellnr. Bestellbeispiel Rohrwalze

Testa di battuta

Thrust collar
Tête de butée
Anschlagkopf



$d_e 1" - 11 \text{ B.W.G.}$

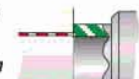


STD → R51.#-6

DLS → R51.#-6-DLS

DLX → R51.#-6-DLX-L_x

.0
a battuta piana
with plane shoulder
à butée plane
mit flachem Anschlag



01 ÷ 16/A
 $V = 0$

.1
con incavo a 3 mm
with 3 mm recess
avec entaille à 3 mm
mit 3 mm Eindrehung



01 ÷ 16/A
 $V = 3 \text{ mm}$
(0.118")

.2
con incavo profondo
with deep recess
avec entaille profonde
mit tiefer Eindrehung



011 ÷ 3/B
 $V_{max} = 15 \text{ mm}$
5 ÷ 11 (0.590")
 $V_{max} = 20 \text{ mm}$
12 ÷ 16/A (0.787")
 $V_{max} = 26 \text{ mm}$
(1.024")

Tubo
Tube
Rohr

d_e inches mm	sp		d_i	
	B.W.G.	inches mm	inches mm	inches mm
5/8" (15,9)	14	0.083 2,11	0.459 11,7	0.437 ÷ 0.500 11,1 ÷ 12,7
	15	0.072 1,83	0.481 12,2	0.452 ÷ 0.523 11,5 ÷ 13,3
	16	0.065 1,65	0.495 12,6	0.472 ÷ 0.543 12,0 ÷ 13,8
	17	0.058 1,47	0.509 12,9	0.492 ÷ 0.571 12,5 ÷ 14,5
	18	0.049 1,24	0.527 13,4	0.512 ÷ 0.590 13,0 ÷ 15,0
	19	0.042 1,07	0.541 13,7	
	20	0.035 0,89	0.555 14,1	0.531 ÷ 0.610 13,5 ÷ 15,5
	22	0.028 0,71	0.569 14,5	

Espansione
Expansion
Expansion
Walzbereich

Mandrino
Tube expander
Dudgeon
Rohrwalzen

Rulli
Rolls
Galets
Rollen

Spina
Mandrel
Broche
Dorn

Mandrinatrici consigliate
Suggested rolling machines
Dudgeonneuses conseillées
Empfohlene Rohreinwalzanlagen

Elettriche
Electrical
Electriques
elektrisch

F90
MS/40 M4/V
Matex

Pneumatiche
Pneumatic
Pneumatiques
pneumatisch

Macrol 750

F90
MP/1 M4/V
MS/60
Matex

Minirol 500
Macrol 1350

Rif. 5R/81
Ref. 5R/81
Réf. 5R/81
Siehe 5R/81



Consigliate
Suggested
Conseillées
Empfehlung

Possibili
Possible
Possibles
Variationsmöglichkeiten



R/51

de inches mm	Tubo Tube Rohr		di		Espansione Expansion Walzbereich		Mandrino Tube expander Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohreinwalzanlagen				
	B.W.G.	sp	inches	mm	inches	mm	Cod.	Cod.	Cod.	inches	mm	Elettriche Electrical Electric elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch	
		inches	mm											
3/4" (19,0)	10	0.134	3,40	0.482	12,2	0.452 ÷ 0.523	11,5 ÷ 13,3	R51.#-02	02-L	5-02÷02/A	3/8" (9,5)	F90 M4/V M4/L MS/30	Macrol 450	
				0.492	12,5	0.472 ÷ 0.543	12,0 ÷ 13,8	R51.#-02/A	02/A-L					
	11	0.120	3,05	0.510	12,9	0.492 ÷ 0.571	12,5 ÷ 14,5	R51.#-03	03-L					
				0.532	13,4	0.512 ÷ 0.590	13,0 ÷ 15,0	R51.#-04	04-L	5-03÷1				
				0.560	14,2	0.531 ÷ 0.610	13,5 ÷ 15,5	R51.#-1	1-1/A-L	5-1/A				
	14	0.083	2,11	0.584	14,8	0.551 ÷ 0.639	14,0 ÷ 16,2	R51.#-1/A	1-1/A-L					
				0.606	15,3	0.570 ÷ 0.669	14,5 ÷ 17,0	R51.#-2	2-L	5-2÷3/B				
				0.620	15,7	0.590 ÷ 0.689	15,0 ÷ 17,5	R51.#-2/A	2/A-L					
	17	0.058	1,47	0.634	16,0	0.610 ÷ 0.709	15,5 ÷ 18,0	R51.#-3	3-L					
				0.652	16,5	0.630 ÷ 0.728	16,0 ÷ 18,5	R51.#-3/A	3/A-L					
				0.680	17,2					3/B-L				
	19	0.042	1,07	0.666	16,8	0.650 ÷ 0.748	16,5 ÷ 19,0	R51.#-3/B	3/B-L					
20	0.035	0,89	0.680	17,2										
			0.694	17,6										
7/8" (22,2)	10	0.134	3,40	0.607	15,4	0.570 ÷ 0.669	14,5 ÷ 17,0	R51.#-2-M	2-L	5-2÷3/B	3/8" (9,5)	F90 M4/V M4/L MS/30	Macrol 450	
				0.635	16,1	0.610 ÷ 0.709	15,5 ÷ 18,0	R51.#-3-M	3-L					
	12	0.109	2,77	0.657	16,6	0.630 ÷ 0.728	16,0 ÷ 18,5	R51.#-3/A-M	3/A-L					
				0.669	17,0	0.650 ÷ 0.748	16,5 ÷ 19,0	R51.#-3/B-M	3/B-L	5-5÷6				
	13	0.095	2,41	0.685	17,4	0.681 ÷ 0.799	17,3 ÷ 20,3	R51.#-5-M	5-L					
				0.709	18,0	0.700 ÷ 0.812	17,8 ÷ 20,8	R51.#-5/A-M	5/A-L	5-7÷8/A				
	15	0.072	1,83	0.731	18,5	0.720 ÷ 0.838	18,3 ÷ 21,3	R51.#-6-M	6-7-L					
	16	0.065	1,65	0.745	18,9									
				0.759	19,2	0.748 ÷ 0.866	19,0 ÷ 22,0	R51.#-7-M	6-7-L					
				0.777	19,7									
				0.791	20,0									
				0.805	20,4									
			0.811	20,6										
			0.819	20,8										
1" (25,4)	8	0.165	4,19	0.670	17,0	0.650 ÷ 0.748	16,5 ÷ 19,0	R51.#-3/B-S	3/B-L	5-2÷3/B	3/8" (9,5)	F90 M4/V M4/L	Macrol 200	
				0.685	17,4	0.681 ÷ 0.799	17,3 ÷ 20,3	R51.#-5	5-L					
	9	0.148	3,76	0.704	17,9	0.700 ÷ 0.812	17,8 ÷ 20,8	R51.#-5/A	5/A-L	5-5÷6				
				0.732	18,6	0.720 ÷ 0.838	18,3 ÷ 21,3	R51.#-6	6-7-L	5-7÷8/A				
	10	0.134	3,40	0.732	18,6	0.748 ÷ 0.866	19,0 ÷ 22,0	R51.#-7	6-7-L					
				0.760	19,3	0.767 ÷ 0.886	19,5 ÷ 22,5	R51.#-7/A	7/A-L					
	11	0.120	3,05	0.760	19,3	0.787 ÷ 0.905	20,0 ÷ 23,0	R51.#-8	8-L	9-L				
				0.782	19,8	0.807 ÷ 0.925	20,5 ÷ 23,5	R51.#-8/A	8/A-L					
	12	0.109	2,77	0.782	19,8	0.827 ÷ 0.964	21,0 ÷ 24,5	R51.#-9	9-L					
				0.791	20,1	0.846 ÷ 0.984	21,5 ÷ 25,0	R51.#-9/A	9/A-L	5-9÷11				
	13	0.095	2,41	0.810	20,6	0.866 ÷ 1.004	22,0 ÷ 25,5	R51.#-10	10-L					
				0.834	21,2									
			0.856	21,7										
			0.870	22,1										
			0.884	22,4										
			0.902	22,9										
			0.916	23,2										
			0.930	23,6										
			0.936	23,8										
			0.944	24,0										



de inches mm	Tubo Tube Tube Rohr				Espansione Expansion Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	inches mm	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohrwalzanlagen		
	B.W.G.	sp inches	mm	dj inches	mm	Cod.	Cod.	Cod.	Elettriche Electrical Electriques elektrisch		Pneumatiche Pneumatic Pneumatiques pneumatisch		
	inches	mm	inches	mm	inches	mm	inches	mm	inches		mm		
1.1/8" (28,5)	11	0.120	3,05	0.885	22,4	0.846 ÷ 0.984	21,5 ÷ 25,0	R51.-#-9/A-M	9/A-L	5-9÷11	3/8" (9,5)	F90 + M4/L M4/V Matex	Macrol 200
	12	0.109	2,77	0.907	22,9	0.866 ÷ 1.004	22,0 ÷ 25,5	R51.-#-10-M	10-L				
	13	0.095	2,41	0.935	23,7	0.905 ÷ 1.043	23,0 ÷ 26,5	R51.-#-11-M	11-L				
	14	0.083	2,11	0.959	24,3	0.945 ÷ 1.102	24,0 ÷ 28,0	R51.-#-12-M	12-L	5-12÷14/A	1/2" (12,7)	F90 + M4/V MS/40 M4/L Matex	Macrol 450
	16	0.065	1,65	0.995	25,2	0.984 ÷ 1.142	25,0 ÷ 29,0	R51.-#-12/A-M	12/A-L				
	18	0.049	1,24	1.027	26,0								
	20	0.035	0,89	1.055	26,7								
22	0.028	0,71	1.069	27,1									
1.1/4" (31,8)	9	0.148	3,76	0.954	24,3	0.905 ÷ 1.043	23,0 ÷ 26,5	R51.-#-11	11-L	5-9÷11	3/8" (9,5)	F90 + M4/L M4/V Matex	Macrol 130
	10	0.134	3,40	0.982	25,0	0.945 ÷ 1.102	24,0 ÷ 28,0	R51.-#-12	12-L				
	11	0.120	3,05	1.010	25,7	0.984 ÷ 1.142	25,0 ÷ 29,0	R51.-#-12/A	12/A-L				
	12	0.109	2,77	1.032	26,2	1.027 ÷ 1.181	26,0 ÷ 30,0	R51.-#-13	13-L	5-12÷14/A	1/2" (12,7)	F90 + M4/L M4/V Matex	Macrol 200
	13	0.095	2,41	1.060	27,0	1.063 ÷ 1.220	27,0 ÷ 31,0	R51.-#-13/A	13/A-L				
	14	0.083	2,11	1.084	27,6								
	16	0.065	1,65	1.120	28,5								
17	0.058	1,47	1.134	28,8									
18	0.049	1,24	1.152	29,3									
20	0.035	0,89	1.180	30,0	1.102 ÷ 1.260	28,0 ÷ 32,0	R51.-#-14	14-15-L					
22	0.028	0,71	1.194	30,4									
1.3/8" (34,9)	12	0.109	2,77	1.157	29,3	1.102 ÷ 1.260	28,0 ÷ 32,0	R51.-#-14-M	14-15-L	5-12÷14/A	1/2" (12,7)	F90 + M4/L M4/V Matex	Macrol 130
	14	0.083	2,11	1.209	30,7	1.142 ÷ 1.299	29,0 ÷ 33,0	R51.-#-14/A-M	14/A-15/A-L				
	16	0.065	1,65	1.245	31,6	1.181 ÷ 1.338	30,0 ÷ 34,0	R51.-#-15-M	14-15-L				
	18	0.049	1,24	1.277	32,4	1.220 ÷ 1.378	31,0 ÷ 35,0	R51.-#-15/A-M	14/A-15/A-L	5-15÷16/A	1/2" (12,7)	F90 + M4/L M4/V Matex	Macrol 200
	20	0.035	0,89	1.305	33,1	1.260 ÷ 1.417	32,0 ÷ 36,0	R51.-#-16-M	16-L				
22	0.028	0,71	1.319	33,5									
1.1/2" (38,1)	8	0.165	4,19	1.170	29,7	1.142 ÷ 1.299	29,0 ÷ 33,0	R51.-#-14/A	14/A-15/A-L	5-12÷14/A	1/2" (12,7)	F90 + M4/L MG/49 Matex	Macrol 130 Masterol 180
	9	0.148	3,76	1.204	30,6	1.181 ÷ 1.338	30,0 ÷ 34,0	R51.-#-15	14-15-L				
	10	0.134	3,40	1.232	31,3	1.220 ÷ 1.378	31,0 ÷ 35,0	R51.-#-15/A	14/A-15/A-L				
	11	0.120	3,05	1.260	32,0	1.260 ÷ 1.417	32,0 ÷ 36,0	R51.-#-16	16-L	5-15÷16/A	1/2" (12,7)	F90 + M4/L M4/V Matex	Macrol 200
	12	0.109	2,77	1.282	32,5								
	13	0.095	2,41	1.310	33,3								
	14	0.083	2,11	1.334	33,9								
	15	0.072	1,83	1.356	34,4								
	16	0.065	1,65	1.370	34,8								
	17	0.058	1,47	1.384	35,1								
	18	0.049	1,24	1.402	35,6	1.319 ÷ 1.476	33,5 ÷ 37,5	R51.-#-16/A	16/A-L				
20	0.035	0,89	1.430	36,3									
22	0.028	0,71	1.444	36,7									