

## Per piastre tubiere di grosso spessore

For thick tube-sheets

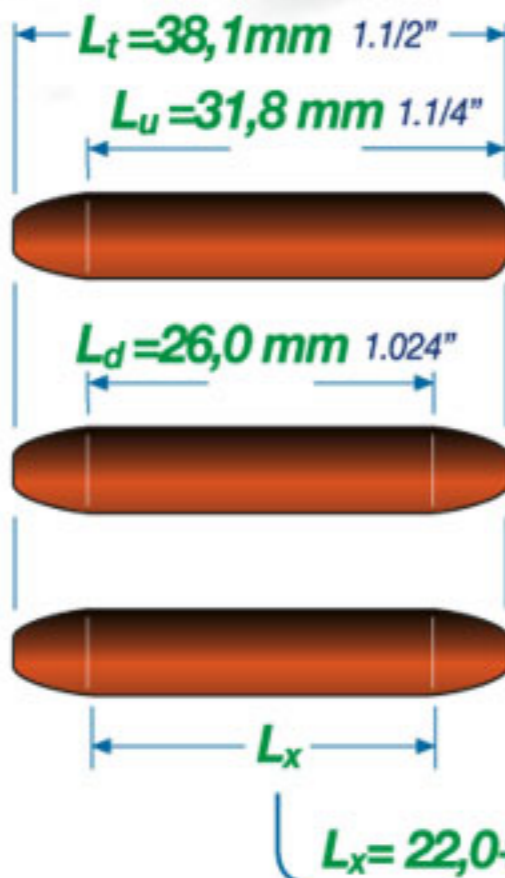
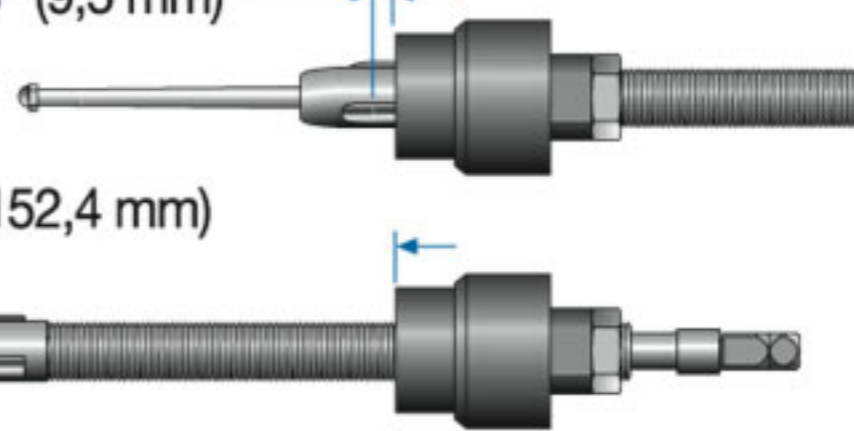
Pour plaques tubulaires de grande épaisseur

Für Rohrböden mit großer Stärke



$RE_{min} = 3/8'' (9,5 \text{ mm})$

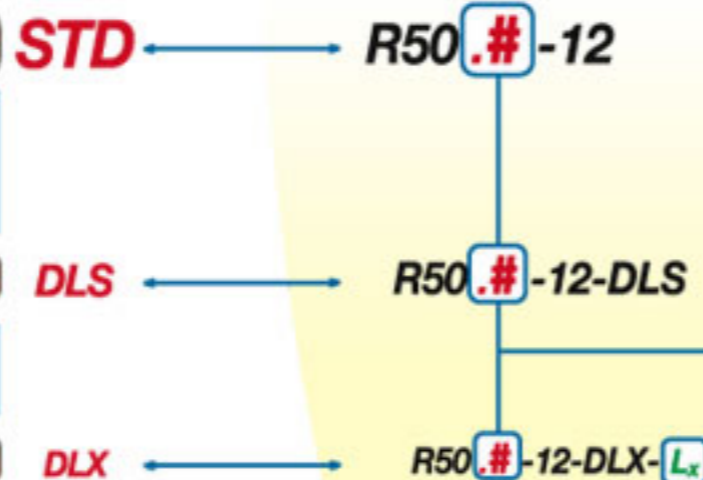
$RE_{max} = 6'' (152,4 \text{ mm})$



### Codice d'esempio per ordinazione mandrini

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

$d_e 1.1/4'' - 11 \text{ B.W.G.}$



### Testa di battuta

Thrust collar  
Tête de butée  
Anschlagkopf



a battuta piana  
with plane shoulder  
a butée plane  
mit flachem Anschlag



017 ÷ 16/A  
 $V = 0$

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



011 ÷ 16/A  
 $V = 3 \text{ mm}$   
(0.118'')

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

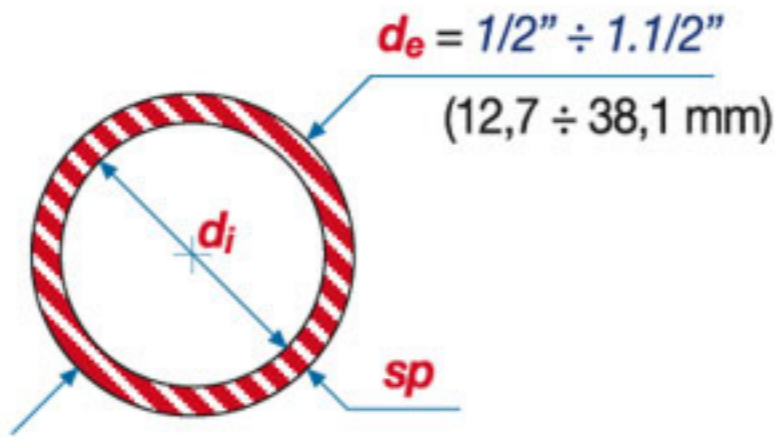


011 ÷ 3/B  
 $V_{max} = 15 \text{ mm}$   
5 ÷ 11 (0.590'')  
 $V_{max} = 20 \text{ mm}$   
12 ÷ 16/A (0.787'')  
 $V_{max} = 26 \text{ mm}$   
(1.024'')

Tubo  
Tube  
Tubo  
Rohr

$d_e$ inches mm	B.W.G.	$sp$		$d_i$		Espansione Expansion Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen Cod.	Rulli Rolls Galets Rollen Cod.	Spina Mandrel Broche Dorn Cod.	inches mm	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohrwalzanlagen	
		inches	mm	inches	mm	inches	mm					Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
1/2'' (12,7)	14	0.083	2,11	0.315	8,0	0.307 ÷ 0.354	7,8 ÷ 9,0	R50.0-017	017-C	5-017÷012	3/8'' (9,5)	F90 MS/40 M4/V MS/60	Macrol 750
				0.323	8,2	0.315 ÷ 0.362	8,0 ÷ 9,2	R50.0-016	016-C				
				0.334	8,5	0.323 ÷ 0.370	8,2 ÷ 9,4	R50.0-015	015-C				
				0.342	8,7	0.331 ÷ 0.378	8,4 ÷ 9,6	R50.0-014	014-C				
				0.356	9,0	0.338 ÷ 0.386	8,6 ÷ 9,8	R50.0-013	013-011-C				
				0.362	9,2	0.346 ÷ 0.393	8,8 ÷ 10,0	R50.0-012	012-010-C				
				0.370	9,4	0.354 ÷ 0.409	9,0 ÷ 10,4	R50.#-011	013-011-C				
				0.378	9,6	0.362 ÷ 0.417	9,2 ÷ 10,6	R50.#-010	012-010-C				
				0.384	9,7	0.370 ÷ 0.425	9,4 ÷ 10,8	R50.#-09	09-C				
				0.402	10,2	0.378 ÷ 0.441	9,6 ÷ 11,2	R50.#-00	00-C				
				0.430	10,9	0.397 ÷ 0.460	10,1 ÷ 11,7	R50.#-00/A	00/A-C				
				0.456	11,6	0.417 ÷ 0.480	10,6 ÷ 12,2	R50.#-01	01-C				
5/8'' (15,9)	13	0.095	2,41	0.407	10,3	0.378 ÷ 0.441	9,6 ÷ 11,2	R50.#-00-M	00-C	5-00	3/8'' (9,5)	F90 MS/40 M4/V MS/60	Macrol 750
				0.421	10,7	0.397 ÷ 0.460	10,1 ÷ 11,7	R50.#-00/A-M	00/A-C				
				0.435	11,1	0.417 ÷ 0.480	10,6 ÷ 12,2	R50.#-01-M	01-C				
				0.459	11,7	0.437 ÷ 0.500	11,1 ÷ 12,7	R50.#-01/A-M	01/A-C				
				0.481	12,2	0.452 ÷ 0.523	11,5 ÷ 13,3	R50.#-02-M	02-C				
				0.495	12,6	0.472 ÷ 0.543	12,0 ÷ 13,8	R50.#-02/A-M	02/A-C				
				0.509	12,9	0.492 ÷ 0.571	12,5 ÷ 14,5	R50.#-03-M	03-C				
				0.527	13,4	0.512 ÷ 0.590	13,0 ÷ 15,0	R50.#-04-M	04-C				
				0.541	13,7	0.531 ÷ 0.610	13,5 ÷ 15,5	R50.#-1-M	1-1/A-C				
				0.555	14,1								
0.569	14,5												

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 Rohreinwalzanlagen				
	B.W.G.	sp inches mm	dj inches mm			Cod.	Cod.	Cod.	Electriche Electrical Electriques elektrisch		Pneumatiche Pneumatic Pneumatiques pneumatisch				
				inches	mm	inches	mm								
3/4" (19,0)	10	0.134	3,40	0.482	12,2	0.452 ÷ 0.523	11,5 ÷ 13,3	R50.#-02	02-C	5-02÷02/A	3/8" (9,5)	F90 M4/V M4/L MS/40 Matex	Macroi 450		
				0.492	12,5	0.472 ÷ 0.543	12,0 ÷ 13,8	R50.#-02/A	02/A-C						
	11	0.120	3,05	0.510	12,9	0.492 ÷ 0.571	12,5 ÷ 14,5	R50.#-03	03-C	5-03÷1				F90 M4/V M4/L MS/40 Matex	Macroi 450
	12	0.109	2,77	0.532	13,4	0.512 ÷ 0.590	13,0 ÷ 15,0	R50.#-04	04-C						
	13	0.095	2,41	0.560	14,2	0.531 ÷ 0.610	13,5 ÷ 15,5	R50.#-1	1-1/A-C	5-1/A				F90 M4/V M4/L MS/40 Matex	Macroi 450
	14	0.083	2,11	0.584	14,8	0.551 ÷ 0.639	14,0 ÷ 16,2	R50.#-1/A	1-1/A-C						
	15	0.072	1,83	0.606	15,3	0.570 ÷ 0.669	14,5 ÷ 17,0	R50.#-2	2-C	5-2÷3/B		F90 M4/V M4/L MS/40 Matex	Macroi 450		
	16	0.065	1,65	0.620	15,7	0.590 ÷ 0.689	15,0 ÷ 17,5	R50.#-2/A	2/A-C						
	17	0.058	1,47	0.634	16,0	0.610 ÷ 0.709	15,5 ÷ 18,0	R50.#-3	3-C	5-2÷3/B		F90 M4/V M4/L MS/40 Matex	Macroi 450		
	18	0.049	1,24	0.652	16,5	0.630 ÷ 0.728	16,0 ÷ 18,5	R50.#-3/A	3/A-C						
19	0.042	1,07	0.666	16,8	0.650 ÷ 0.748	16,5 ÷ 19,0	R50.#-3/B	3/B-C		F90 M4/V M4/L MS/60 Matex	Macroi 750				
20	0.035	0,89	0.680	17,2											
21	0.032	0,81	0.686	17,4											
22	0.028	0,71	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	R50.#-2-M	2-C	5-2÷3/B	3/8" (9,5)	F90 M4/V M4/L MS/40 Matex	Macroi 450		
	11	0.120	3,05	0.635	16,1	0.610 ÷ 0.709	15,5 ÷ 18,0	R50.#-3-M	3-C						
	12	0.109	2,77	0.657	16,6	0.630 ÷ 0.728	16,0 ÷ 18,5	R50.#-3/A-M	3/A-C	5-5÷6				F90 M4/V M4/L MS/40 Matex	Macroi 450
	13	0.095	2,41	0.685	17,4	0.650 ÷ 0.748	16,5 ÷ 19,0	R50.#-3/B-M	3/B-C						
	14	0.083	2,11	0.709	18,0	0.681 ÷ 0.799	17,3 ÷ 20,3	R50.#-5-M	5-C	5-5÷6				F90 M4/V M4/L MS/60 MP/1 Matex	Macroi 750
	15	0.072	1,83	0.731	18,5	0.700 ÷ 0.812	17,8 ÷ 20,8	R50.#-5/A-M	5/A-C						
	16	0.065	1,65	0.745	18,9	0.720 ÷ 0.838	18,3 ÷ 21,3	R50.#-6-M	6-7-C	5-7÷8/A		F90 M4/V M4/L MS/60 MP/1 Matex	Macroi 750		
	17	0.058	1,47	0.759	19,2										
	18	0.049	1,24	0.777	19,7	0.748 ÷ 0.866	19,0 ÷ 22,0	R50.#-7-M	6-7-C						
	19	0.042	1,07	0.791	20,0										
20	0.035	0,89	0.805	20,4											
21	0.032	0,81	0.811	20,6											
22	0.028	0,71	0.819	20,8											
1" (25,4)	8	0.165	4,19	0.670	17,0	0.650 ÷ 0.748	16,5 ÷ 19,0	R50.#-3/B-S	3/B-C	5-2÷3/B	3/8" (9,5)	F90 M4/L MS/30 M4/V Matex	Macroi 450		
	9	0.148	3,76	0.704	17,9	0.681 ÷ 0.799	17,3 ÷ 20,3	R50.#-5	5-C	5-5÷6				F90 M4/L MS/30 M4/V Matex	Macroi 450
	10	0.134	3,40	0.732	18,6	0.700 ÷ 0.812	17,8 ÷ 20,8	R50.#-5/A	5/A-C						
	11	0.120	3,05	0.760	19,3	0.720 ÷ 0.838	18,3 ÷ 21,3	R50.#-6	6-7-C	5-6/A÷8/A				F90 M4/L MS/30 M4/V Matex	Macroi 450
	12	0.109	2,77	0.782	19,8	0.748 ÷ 0.866	19,0 ÷ 22,0	R50.#-7	6-7-C						
	13	0.095	2,41	0.791	20,1	0.767 ÷ 0.886	19,5 ÷ 22,5	R50.#-7/A	7/A-C	5-6/A÷8/A				F90 M4/L MS/30 M4/V Matex	Macroi 450
	14	0.083	2,11	0.810	20,6	0.787 ÷ 0.905	20,0 ÷ 23,0	R50.#-8	8-C						
	15	0.072	1,83	0.834	21,2	0.807 ÷ 0.925	20,5 ÷ 23,5	R50.#-8/A	8/A-C	5-9÷11		F90 M4/L MS/60 MS/60 Matex	Macroi 750		
	16	0.065	1,65	0.856	21,7	0.827 ÷ 0.964	21,0 ÷ 24,5	R50.#-9	9-C						
	17	0.058	1,47	0.870	22,1	0.846 ÷ 0.984	21,5 ÷ 25,0	R50.#-9/A	9/A-C	5-9÷11		F90 M4/L MS/60 MS/60 Matex	Macroi 750		
	18	0.049	1,24	0.884	22,4										
	19	0.042	1,07	0.902	22,9	0.866 ÷ 1.004	22,0 ÷ 25,5	R50.#-10	10-C						
20	0.035	0,89	0.916	23,2											
21	0.032	0,81	0.930	23,6											
22	0.028	0,71	0.936	23,8											
22	0.028	0,71	0.944	24,0											



$d_e$ inches mm	Tubo Tube Rohr		$d_i$		Espansione 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 Rohreinwalzanlagen		
	B.W.G.	$sp$	$d_i$	$d_i$	$d_i$	$d_i$	Cod.	Cod.	Cod.		Electriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch	
	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	R50.#-9/A-M	9/A-C	5-9÷11	3/8" (9,5)	F90 M4/L MS/40 M4/V	Macrol 450
	12	0.109	2,77	0.907	22,9	0.866 ÷ 1.004	22,0 ÷ 25,5	R50.#-10-M	10-C				
	13	0.095	2,41	0.935	23,7	0.905 ÷ 1.043	23,0 ÷ 26,5	R50.#-11-M	11-C				
	14	0.083	2,11	0.959	24,3	0.945 ÷ 1.102	24,0 ÷ 28,0	R50.#-12-M	12-C	5-12÷14/A	1/2" (12,7)	F90 M4/V MS/60 M4/L	Macrol 750
	16	0.065	1,65	0.995	25,2	0.984 ÷ 1.142	25,0 ÷ 29,0	R50.#-12/A-M	12/A-C				
	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	R50.#-11	11-C	5-9÷11	3/8" (9,5)	F90 M4/L MS/40 M4/V	Macrol 200
	10	0.134	3,40	0.982	25,0	0.945 ÷ 1.102	24,0 ÷ 28,0	R50.#-12	12-C				
	11	0.120	3,05	1.010	25,7	0.984 ÷ 1.142	25,0 ÷ 29,0	R50.#-12/A	12/A-C				
	12	0.109	2,77	1.032	26,2	1.027 ÷ 1.181	26,0 ÷ 30,0	R50.#-13	13-C	5-12÷14/A	1/2" (12,7)	F90 M4/L MS/40 M4/V	Macrol 450
	13	0.095	2,41	1.060	27,0	1.063 ÷ 1.220	27,0 ÷ 31,0	R50.#-13/A	13/A-C				
	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									
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	R50.#-14-M	14-15-C	5-12÷14/A	1/2" (12,7)	F90 M4/L MS/40 M4/V	Macrol 200
	14	0.083	2,11	1.209	30,7	1.142 ÷ 1.299	29,0 ÷ 33,0	R50.#-14/A-M	14/A-15/A-C				
	16	0.065	1,65	1.245	31,6	1.181 ÷ 1.338	30,0 ÷ 34,0	R50.#-15-M	14-15-C	5-15÷16/A	1/2" (12,7)	F90 M4/L MS/40 M4/V	Macrol 450
	18	0.049	1,24	1.277	32,4	1.220 ÷ 1.378	31,0 ÷ 35,0	R50.#-15/A-M	14/A-15/A-C				
	20	0.035	0,89	1.305	33,1	1.260 ÷ 1.417	32,0 ÷ 36,0	R50.#-16-M	16-C				
	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	R50.#-14/A	14/A-15/A-C	5-12÷14/A	1/2" (12,7)	F90 M4/L MS/40 M4/V	Macrol 200
	9	0.148	3,76	1.204	30,6	1.181 ÷ 1.338	30,0 ÷ 34,0	R50.#-15	14-15-C				
	10	0.134	3,40	1.232	31,3	1.220 ÷ 1.378	31,0 ÷ 35,0	R50.#-15/A	14/A-15/A-C				
	11	0.120	3,05	1.260	32,0	1.260 ÷ 1.417	32,0 ÷ 36,0	R50.#-16	16-C	5-15÷16/A	1/2" (12,7)	F90 M4/L MS/40 M4/V	Macrol 450
	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	R50.#-16/A	16/A-C				
20	0.035	0,89	1.430	36,3									
22	0.028	0,71	1.444	36,7									