

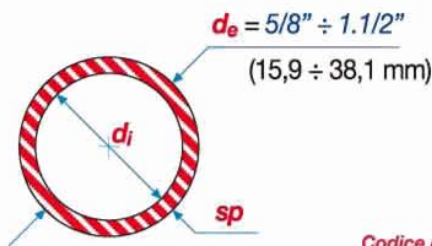
R/31

Per piastre tubiere di medio spessore

For medium thickness tube-sheets

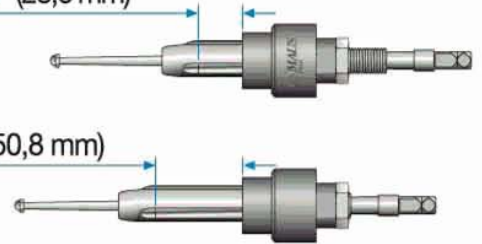
Pour plaques tubulaires de moyenne épaisseur

Für Rohrböden mit mittlerer Stärke



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

$RE_{max} = 2" (50,8 \text{ mm})$



Codice d'esempio per ordinazione mandrini

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

$d_e 3/4" - 13 \text{ B.W.G.}$

Testa di battuta

Thrust collar
Tête de butée
Anschlagkopf



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

.0



01 ÷ 16/A
V = 0

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

.1



01 ÷ 16/A
V = 3 mm
(0.118")

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

.2



011 ÷ 3/B
Vmax = 15 mm
5 ÷ 11 (0.590")
Vmax = 20 mm
12 ÷ 16/A
Vmax = 26 mm
(1.024")

Tubo
Tube
Tube
Rohr

d_e inches mm	B.W.G.	sp		d_i		Espansione		Mandrino Tube expander Dudgeon Rohrwalzen Cod.	Rulli Rolls Galets Rollen Cod.	Spina Mandrel Broche Dorn Cod.	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohrreinwalzanlagen	
		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	R31.#-01/A-M	01/A-L	4-01/A	Elettriche Electrical Electriques elektrisch F90 MS/40 M4/V Matex	
	15	0.072	1,83	0.481	12,2	0.452 ÷ 0.523	11,5 ÷ 13,3	R31.#-02-M	02-L	4-02 ÷ 02/A		Pneumatiche Pneumatiques pneumatich Macrol 750
	16	0.065	1,65	0.495	12,6	0.472 ÷ 0.543	12,0 ÷ 13,8	R31.#-02/A-M	02/A-L	3/8" (9,5)		
	17	0.058	1,47	0.509	12,9	0.492 ÷ 0.571	12,5 ÷ 14,5	R31.#-03-M	03-L			4-03 ÷ 1
	18	0.049	1,24	0.527	13,4	0.512 ÷ 0.590	13,0 ÷ 15,0	R31.#-04-M	04-L			
	19	0.042	1,07	0.541	13,7	0.531 ÷ 0.610	13,5 ÷ 15,5	R31.#-1-M	1-1/A-L			
	20	0.035	0,89	0.555	14,1							
	22	0.028	0,71	0.569	14,5							



Rif. 5R/71
Ref. 5R/71
Ref. 5R/71
Siehe 5R/71



Consigliate
Suggested
Conseillées
Empfehlung

Possibili
Possible
Possibles
Variationsmöglichkeiten

de inches mm	Tubo Tube Rohr				Espansione Expansion Walzbereich		Mandrino Tube expander Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohreinwalzanlagen		
	sp		di		inches		Cod.	Cod.	Cod.	inches mm	Elektrische Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
	B.W.G.	inches	mm	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	R31.#-02	02-L	4-02÷02/A	F90 + M4/V M4/L MS/30 Matex	Macrol 450
				0.492	12,5	0.472 ÷ 0.543	12,0 ÷ 13,8	R31.#-02/A	02/A-L			
	11	0.120	3,05	0.510	12,9	0.492 ÷ 0.571	12,5 ÷ 14,5	R31.#-03	03-L	4-03÷1	F90 + M4/V M4/L MS/30 Matex	Macrol 450
	12	0.109	2,77	0.532	13,4	0.512 ÷ 0.590	13,0 ÷ 15,0	R31.#-04	04-L			
	13	0.095	2,41	0.560	14,2	0.531 ÷ 0.610	13,5 ÷ 15,5	R31.#-1	1-1/A-L	4-1/A	F90 + M4/V M4/L MS/30 Matex	Macrol 450
	14	0.083	2,11	0.584	14,8	0.551 ÷ 0.639	14,0 ÷ 16,2	R31.#-1/A	1-1/A-L			
	15	0.072	1,83	0.606	15,3	0.570 ÷ 0.669	14,5 ÷ 17,0	R31.#-2	2-L	4-2÷3/B	F90 + M4/L MS/60 M4/V Matex	Macrol 750
	16	0.065	1,65	0.620	15,7	0.590 ÷ 0.689	15,0 ÷ 17,5	R31.#-2/A	2/A-L			
	17	0.058	1,47	0.634	16,0							
	18	0.049	1,24	0.652	16,5	0.610 ÷ 0.709	15,5 ÷ 18,0	R31.#-3	3-L			
19	0.042	1,07	0.666	16,8	0.630 ÷ 0.728	16,0 ÷ 18,5	R31.#-3/A	3/A-L				
20	0.035	0,89	0.680	17,2								
21	0.032	0,81	0.686	17,4	0.650 ÷ 0.748	16,5 ÷ 19,0	R31.#-3/B	3/B-L				
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	R31.#-2-M	2-L	4-2÷3/B	F90 + M4/V M4/L MS/30 Matex	Macrol 450
	11	0.120	3,05	0.635	16,1	0.610 ÷ 0.709	15,5 ÷ 18,0	R31.#-3-M	3-L			
	12	0.109	2,77	0.657	16,6	0.630 ÷ 0.728	16,0 ÷ 18,5	R31.#-3/A-M	3/A-L	4-5÷6	F90 + M4/L MS/60 M4/V Matex	Macrol 750
				0.669	17,0	0.650 ÷ 0.748	16,5 ÷ 19,0	R31.#-3/B-M	3/B-L			
	13	0.095	2,41	0.685	17,4							
	14	0.083	2,11	0.709	18,0	0.681 ÷ 0.799	17,3 ÷ 20,3	R31.#-5-M	5-L	4-7÷8/A	F90 + M4/L MS/60 M4/V Matex	Macrol 750
	15	0.072	1,83	0.731	18,5	0.700 ÷ 0.812	17,8 ÷ 20,8	R31.#-5/A-M	5/A-L			
	16	0.065	1,65	0.745	18,9							
	17	0.058	1,47	0.759	19,2	0.720 ÷ 0.838	18,3 ÷ 21,3	R31.#-6-M	6-7-L			
	18	0.049	1,24	0.777	19,7							
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	0.748 ÷ 0.866	19,0 ÷ 22,0	R31.#-7-M	6-7-L				
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	R31.#-3/B-S	3/B-L	4-2÷3/B	F90 + M4/L M4/V Matex	Macrol 200
				0.685	17,4							
	9	0.148	3,76	0.704	17,9	0.681 ÷ 0.799	17,3 ÷ 20,3	R31.#-5	5-L	4-5÷6	F90 + M4/L M4/V Matex	Macrol 200
	10	0.134	3,40	0.732	18,6	0.700 ÷ 0.812	17,8 ÷ 20,8	R31.#-5/A	5/A-L			
	11	0.120	3,05	0.760	19,3	0.720 ÷ 0.838	18,3 ÷ 21,3	R31.#-6	6-7-L	4-7÷8/A	F90 + M4/L M4/V MS/40 Matex	Macrol 450
	12	0.109	2,77	0.782	19,8	0.748 ÷ 0.866	19,0 ÷ 22,0	R31.#-7	6-7-L			
				0.791	20,1	0.767 ÷ 0.886	19,5 ÷ 22,5	R31.#-7/A	7/A-L			
	13	0.095	2,41	0.810	20,6	0.787 ÷ 0.905	20,0 ÷ 23,0	R31.#-8	8-L	4-9÷11	F90 + M4/L M4/V MS/40 Matex	Macrol 450
	14	0.083	2,11	0.834	21,2	0.807 ÷ 0.925	20,5 ÷ 23,5	R31.#-8/A	8/A-L			
	15	0.072	1,83	0.856	21,7							
	16	0.065	1,65	0.870	22,1	0.827 ÷ 0.964	21,0 ÷ 24,5	R31.#-9	9-L			
	17	0.058	1,47	0.884	22,4							
18	0.049	1,24	0.902	22,9	0.846 ÷ 0.984	21,5 ÷ 25,0	R31.#-9/A	9/A-L				
19	0.042	1,07	0.916	23,2								
20	0.035	0,89	0.930	23,6								
21	0.032	0,81	0.936	23,8	0.866 ÷ 1.004	22,0 ÷ 25,5	R31.#-10	10-L				
22	0.028	0,71	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 Rohreinwalzanlagen		
	B.W.G.	sp inches mm	di inches mm			Cod.	Cod.	Cod.	Elettriche Electrical Electriques elektrisch		Pneumatiche Pneumatic Pneumatiques pneumatisch		
				inches	mm								
1.1/8" (28,5)	11	0.120	3,05	0.885	22,4	0.846 ÷ 0.984	21,5 ÷ 25,0	R31.-#-9/A-M	9/A-L	4-9÷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	R31.-#-10-M	10-L				
	13	0.095	2,41	0.935	23,7	0.905 ÷ 1.043	23,0 ÷ 26,5	R31.-#-11-M	11-L				
	14	0.083	2,11	0.959	24,3	0.945 ÷ 1.102	24,0 ÷ 28,0	R31.-#-12-M	12-L				
	16	0.065	1,65	0.995	25,2	0.984 ÷ 1.142	25,0 ÷ 29,0	R31.-#-12/A-M	12/A-L	4-12÷14/A	1/2" (12,7)	F90 M4/V MS/40 M4/L Matex	Macrol 450
	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	R31.-#-11	11-L	4-9÷11	3/8" (9,5)		Macrol 130
	10	0.134	3,40	0.982	25,0	0.945 ÷ 1.102	24,0 ÷ 28,0	R31.-#-12	12-L				
	11	0.120	3,05	1.010	25,7	0.984 ÷ 1.142	25,0 ÷ 29,0	R31.-#-12/A	12/A-L				
	12	0.109	2,77	1.032	26,2	1.027 ÷ 1.181	26,0 ÷ 30,0	R31.-#-13	13-L				
	13	0.095	2,41	1.060	27,0	1.063 ÷ 1.220	27,0 ÷ 31,0	R31.-#-13/A	13/A-L	4-12÷14/A	1/2" (12,7)	F90 M4/L M4/V Matex	Macrol 200
	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	R31.-#-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	R31.-#-14-M	14-15-L	4-12÷14/A			Macrol 130
	14	0.083	2,11	1.209	30,7	1.142 ÷ 1.299	29,0 ÷ 33,0	R31.-#-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	R31.-#-15-M	14-15-L				
	18	0.049	1,24	1.277	32,4	1.220 ÷ 1.378	31,0 ÷ 35,0	R31.-#-15/A-M	14/A-15/A-L				
	20	0.035	0,89	1.305	33,1	1.260 ÷ 1.417	32,0 ÷ 36,0	R31.-#-16-M	16-L	4-15÷16/A	1/2" (12,7)	F90 M4/L M4/V Matex	Macrol 200
	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	R31.-#-14/A	14/A-15/A-L	4-12÷14/A			Macrol 130
	9	0.148	3,76	1.204	30,6	1.181 ÷ 1.338	30,0 ÷ 34,0	R31.-#-15	14-15-L				
	10	0.134	3,40	1.232	31,3	1.220 ÷ 1.378	31,0 ÷ 35,0	R31.-#-15/A	14/A-15/A-L				
	11	0.120	3,05	1.260	32,0	1.260 ÷ 1.417	32,0 ÷ 36,0	R31.-#-16	16-L				
	12	0.109	2,77	1.282	32,5					4-15÷16/A	1/2" (12,7)	F90 M4/L MG/49 M4/V Matex	Masterol 180
	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	1.319 ÷ 1.476	33,5 ÷ 37,5	R31.-#-16/A	16/A-L			F90 M4/L M4/V Matex	Macrol 200
	18	0.049	1,24	1.402	35,6								
	20	0.035	0,89	1.430	36,3								
22	0.028	0,71	1.444	36,7									