

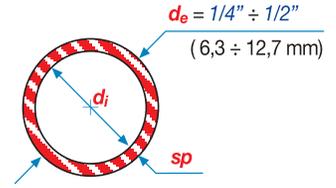
R/11

Per tubi di piccolo diametro e piastre tubiere di piccola spessore

For small diameter tubes and low thickness tube-sheets

Pour tubes de petit diamètre et plaques tubulaires de petite épaisseur

Für Rohre mit kleinem Durchmesser und Rohrböden mit geringer Stärke



$RE_{min} = 1/4" (6,3 \text{ mm})$



$RE_{max} = 1.1/4" (31,8 \text{ mm})$



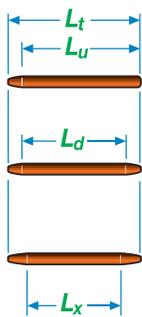
Rulli Rolls Galets Rollen Nr.	L_t		STD L_u		DLS L_d		DLX L_x	
	inches	mm	inches	mm	inches	mm	inches	mm
037-S ÷ 023-S	0.708	18,0	0.630	16,0	0.551	14,0	0.472÷0.512	12,0÷13,0
022-S ÷ 017-S	0.787	20,0	0.708	18,0	0.630	16,0	0.551÷0.590	14,0÷15,0
016-S ÷ 09-S	0.905	23,0	0.787	20,0	0.669	17,0	0.590÷0.630	15,0÷16,0

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



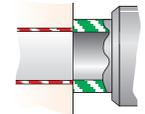
$d_e 3/8" - 20 \text{ B.W.G.}$

STD → R11.0 -019

DLS → R11.0 -019-DLS

DLX → R11.0 -019-DLX- L_x

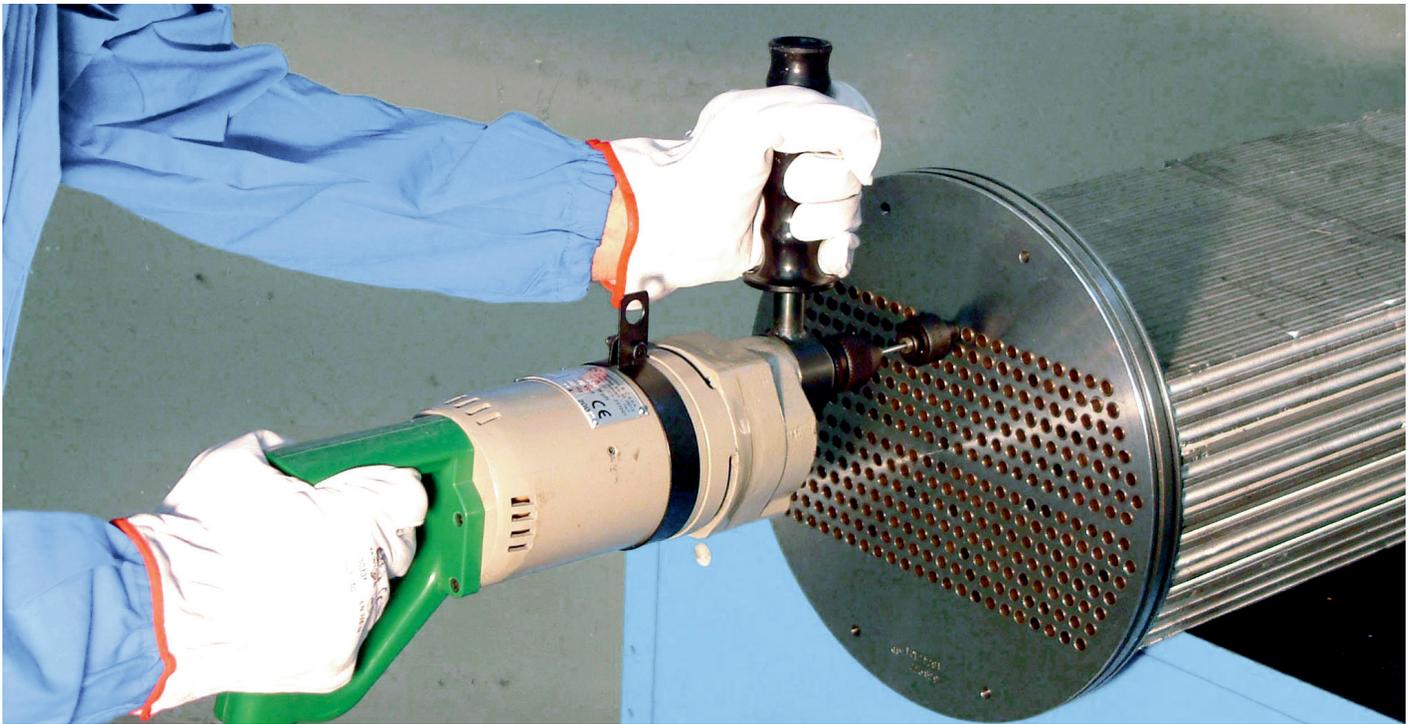
a battuta piana
with plane shoulder
a butée plane
mit flachem Anschlag



V=0

d_e inches mm	B.W.G.	sp		d_i		Espansione Expansion Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen Nr.	Rulli Rolls Galets Rollen Nr.	Spina Mandrel Broche Dorn Nr.	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohrwalzanlagen	Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
		inches	mm	inches	mm	inches	mm						
1/4" (6,3)	19	0,042	1,07	0,158	4,0	0,149 ÷ 0,173	3,8 ÷ 4,4	R11.0-037	037-S	1-037 ÷ 036	1/4" (6,3)	F90 + MP/4	Minirol 2100
				0,166	4,1	0,158 ÷ 0,181	4,0 ÷ 4,6	R11.0-036	036-S				
				0,169	4,3	0,165 ÷ 0,189	4,2 ÷ 4,8	R11.0-035	035-S				
				0,180	4,5	0,173 ÷ 0,205	4,4 ÷ 5,2	R11.0-034	034-S	1-035 ÷ 031			
				0,186	4,7	0,181 ÷ 0,212	4,6 ÷ 5,4	R11.0-033	033-030-S				
				0,189 ÷ 0,220	4,8 ÷ 5,6	R11.0-032/A	032/A-029-S						
				0,197 ÷ 0,228	5,0 ÷ 5,8	R11.0-031/A	031/A-028-S						
				0,205 ÷ 0,236	5,2 ÷ 6,0	R11.0-030	033-030-S	1-030 ÷ 026					

Fig. TE23-F1



Tubo Tube Rohr				Espansione Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	Mandrinatrici consigliate Suggested rolling machines Dudgeonneuses conseillées Empfohlene Rohreinwalzanlagen				
de inches mm	sp		di				Nr.	Nr.	inches mm	Elektrische Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch		
	B.W.G.	inches	mm	inches	mm	inches	mm	Nr.					
3/8" (9,5)	14	0.083	2,11	0.205	5,2	0.197 ÷ 0.228	5,0 ÷ 5,8	R11.0-031/A-M	031/A-028-S	1/4" (6,3)	F90 +	MP/3	
				0.209	5,3	0.205 ÷ 0.236	5,2 ÷ 6,0	R11.0-030-M	033-030-S				
				0.220	5,6	0.212 ÷ 0.244	5,4 ÷ 6,2	R11.0-029	032/A-029-S				
	15	0.072	1,83	0.231	5,8	0.220 ÷ 0.251	5,6 ÷ 6,4	R11.0-028	031/A-028-S				1-030 ÷ 026
				0.236	6,0	0.228 ÷ 0.260	5,8 ÷ 6,6	R11.0-027	027-025-S				
				0.245	6,2	0.236 ÷ 0.268	6,0 ÷ 6,8	R11.0-026	026-024-S				
	16	0.065	1,65	0.252	6,4	0.244 ÷ 0.275	6,2 ÷ 7,0	R11.0-025	027-025-S				
				0.259	6,5	0.252 ÷ 0.286	6,4 ÷ 7,2	R11.0-024	026-024-S				
				0.268	6,8	0.260 ÷ 0.291	6,6 ÷ 7,4	R11.0-023	023-S				
	17	0.058	1,47	0.277	7,0	0.268 ÷ 0.309	6,8 ÷ 7,8	R11.0-022	022-S				1-022 ÷ 021
				0.291	7,3	0.275 ÷ 0.315	7,0 ÷ 8,0	R11.0-021	021-S				
				0.295	7,5	0.286 ÷ 0.323	7,2 ÷ 8,2	R11.0-020	020-S				
18	0.049	1,24	0.305	7,7	0.291 ÷ 0.331	7,4 ÷ 8,4	R11.0-019	019-S					
			0.311	7,9	0.300 ÷ 0.338	7,6 ÷ 8,6	R11.0-018	018-S					
			0.319	8,1	0.307 ÷ 0.346	7,8 ÷ 8,8	R11.0-017-M	017-S					
19	0.042	1,07	0.325	8,2	0.315 ÷ 0.362	8,0 ÷ 9,2	R11.0-016-M	016-S	1-016 ÷ 012				
			0.323	8,4	0.323 ÷ 0.370	8,2 ÷ 9,4	R11.0-015-M	015-S					
			0.334	8,5	0.323 ÷ 0.370	8,2 ÷ 9,4	R11.0-015	015-S					
1/2" (12,7)	14	0.083	2,11	0.342	8,7	0.331 ÷ 0.378	8,4 ÷ 9,6	R11.0-014	014-S	1/4" (6,3)	F90 +	MP/2 MS/80	
				0.356	9,0	0.338 ÷ 0.386	8,6 ÷ 9,8	R11.0-013	013-S				
	0.362	9,2	0.346 ÷ 0.394	8,8 ÷ 10,0	R11.0-012	012-011-S	1-016 ÷ 012						
	0.370	9,4	0.354 ÷ 0.409	9,0 ÷ 10,4	R11.0-011	012-011-S							
	0.374	9,5	0.362 ÷ 0.417	9,2 ÷ 10,6	R11.0-010	010-S	1-011 ÷ 09						
17	0.058	1,47	0.384	9,7	0.370 ÷ 0.425	9,4 ÷ 10,8	R11.0-09	09-S					

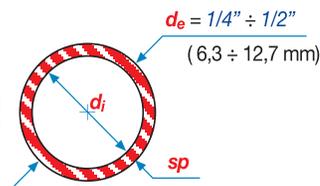
R/11/80

Per tubi di piccolo diametro e piastre tubiere di grosso spessore

For small diameter tubes and thick tube-sheets

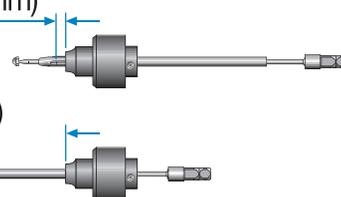
Pour tubes de petit diamètre et plaques tubulaires de grande épaisseur

Für Rohre mit - kleinem - Durchmesser und Rohrböden mit großer Stärke



$RE_{min} = 1/4''$ (6,3 mm)

$RE_{max} = 3.1/4''$ (82,6 mm)

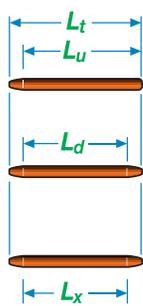


Rulli Rolls Galets Rollen Nr.	L_t		STD L_u		DLS L_d		DLX L_x	
	inches	mm	inches	mm	inches	mm	inches	mm
037-S ÷ 023-S	0.708	18,0	0.630	16,0	0.551	14,0	0.472÷0.512	12,0÷13,0
022-S ÷ 017-S	0.787	20,0	0.708	18,0	0.630	16,0	0.551÷0.590	14,0÷15,0
016-S ÷ 09-S	0.905	23,0	0.787	20,0	0.669	17,0	0.590÷0.630	15,0÷16,0

Codice d'esempio per ordinazione mandrini

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

d_e 1/4" - 22 B.W.G.



STD → R11 .0/80 -032

DLS → R11 .0/80 -032-DLS

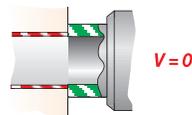
DLX → R11 .0/80 -032-DLX- L_x

Testa di battuta

Thrust collar
Tête de butée
Anschlagkopf



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

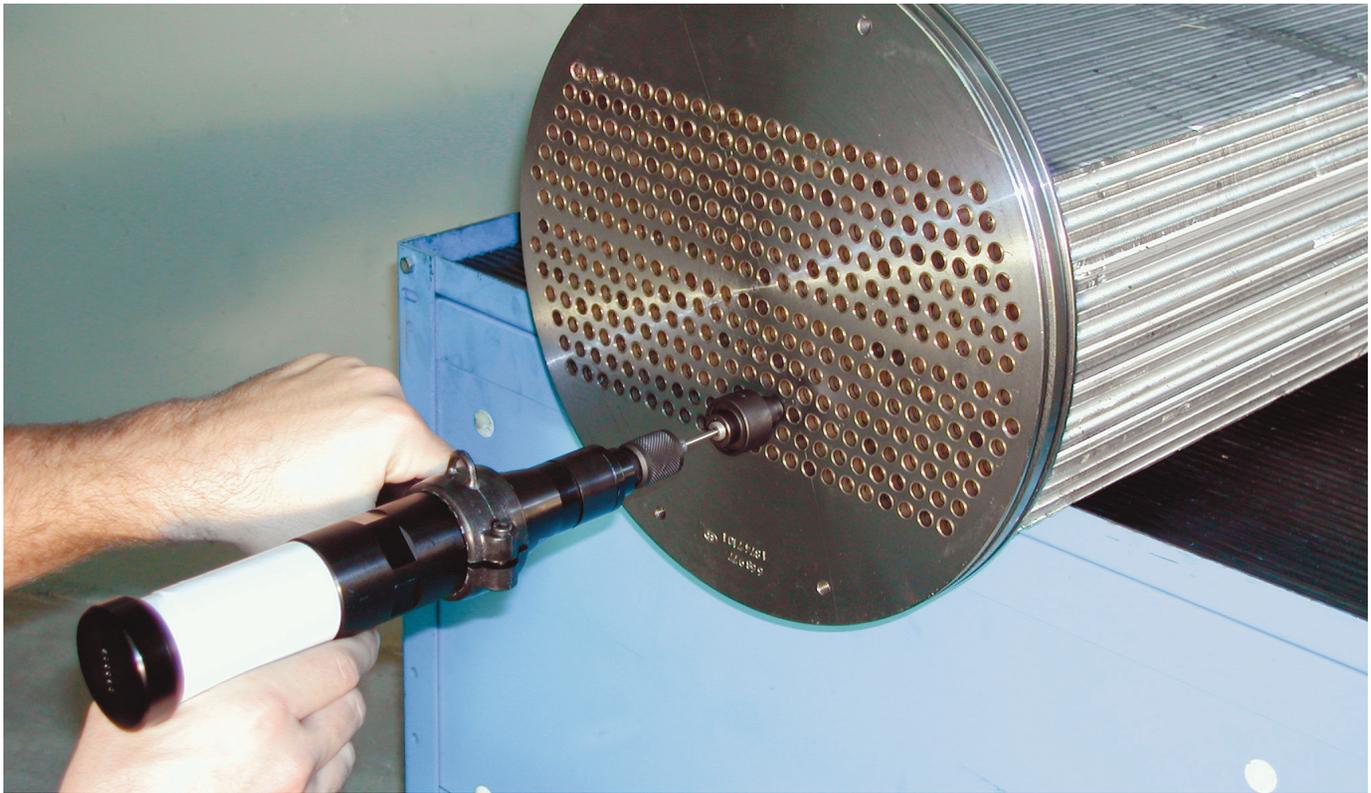


d_e inches mm	B.W.G.	sp		d_i		Espansione Expansion Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen Nr.	Rulli Rolls Galets Rollen Nr.	Spina Mandrel Broche Dorn Nr.	inches mm	Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
		inches	mm	inches	mm	inches	mm	Nr.	Nr.	Nr.			
1/4" (6,3)	19	0,042	1,07	0,158	4,0	0.149 ÷ 0.173	3,8 ÷ 4,4	R11.0/80-037	037-S	1/80-037 ÷ 036	1/4" (6,3)	F90 + MP/4	Minirol 2100
				0,166	4,1	0.158 ÷ 0.181	4,0 ÷ 4,6	R11.0/80-036	036-S				
				0,169	4,3	0.165 ÷ 0.189	4,2 ÷ 4,8	R11.0/80-035	035-S				
				0,180	4,5	0.173 ÷ 0.205	4,4 ÷ 5,2	R11.0/80-034	034-S				
				0,186	4,7	0.181 ÷ 0.212	4,6 ÷ 5,4	R11.0/80-033	033-030-S				
				0,189 ÷ 0.220	4,8 ÷ 5,6	R11.0/80-032/A	032/A-029-S						
				0,197 ÷ 0.228	5,0 ÷ 5,8	R11.0/80-031/A	031/A-028-S						
				0,205 ÷ 0.236	5,2 ÷ 6,0	R11.0/80-030	033-030-S						
				0,208	5,3								
				0,226	5,7								

Mandrinatrici consigliate

Suggested rolling machines
Dudgeonneuses conseillées
Empfohlene Rohreinwalzanlagen

Fig. TE25-F1



Tubo Tube Tube Rohr				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						
de inches mm	B.W.G.	sp		dj				Nr.	Nr.	Nr.	inches mm	Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch		
		inches	mm	inches	mm	inches	mm								
3/8" (9,5)	14	0.083	2,11	0.205	5,2	0.197 ÷ 0.228	5,0 ÷ 5,8	R11.0/80-031/A-M	031/A-028-S	1/80-035 ÷ 031	1/4" (6,3)	F90 +	MP/3		
				0.209	5,3	0.205 ÷ 0.236	5,2 ÷ 6,0	R11.0/80-030-M	033-030-S						
				0.220	5,6	0.212 ÷ 0.244	5,4 ÷ 6,2	R11.0/80-029	032/A-029-S						
	15	0.072	1,83	0.231	5,8	0.220 ÷ 0.251	5,6 ÷ 6,4	R11.0/80-028	031/A-028-S					1/80-030 ÷ 026	Minirol 1300
				0.236	6,0	0.228 ÷ 0.260	5,8 ÷ 6,6	R11.0/80-027	027-025-S						
				0.244	6,2	0.244 ÷ 0.275	6,2 ÷ 7,0	R11.0/80-026	026-024-S						
	16	0.065	1,65	0.245	6,2	0.236 ÷ 0.268	6,0 ÷ 6,8	R11.0/80-025	027-025-S					1/80-025 ÷ 023	Minirol 2100
				0.252	6,4	0.244 ÷ 0.275	6,2 ÷ 7,0	R11.0/80-024	026-024-S						
				0.259	6,5	0.252 ÷ 0.286	6,4 ÷ 7,2	R11.0/80-023	023-S						
	17	0.058	1,47	0.268	6,8	0.260 ÷ 0.295	6,6 ÷ 7,4	R11.0/80-022	022-S					1/80-022 ÷ 021	Minirol 800
				0.277	7,0	0.268 ÷ 0.309	6,8 ÷ 7,8	R11.0/80-021	021-S						
				0.291	7,3	0.275 ÷ 0.315	7,0 ÷ 8,0	R11.0/80-020	020-S						
18	0.049	1,24	0.295	7,5	0.286 ÷ 0.323	7,2 ÷ 8,2	R11.0/80-019	019-S	1/80-020 ÷ 019	Minirol 800					
			0.305	7,7	0.295 ÷ 0.331	7,4 ÷ 8,4	R11.0/80-018	018-S							
			0.311	7,9	0.300 ÷ 0.338	7,6 ÷ 8,6	R11.0/80-017-M	017-S							
19	0.042	1,07	0.307	8,1	0.307 ÷ 0.346	7,8 ÷ 8,8	R11.0/80-016-M	016-S	1/80-018 ÷ 017	Minirol 800					
			0.319	8,1	0.307 ÷ 0.346	7,8 ÷ 8,8	R11.0/80-015-M	015-S							
			0.325	8,2	0.315 ÷ 0.362	8,0 ÷ 9,2	R11.0/80-014	014-S							
1/2" (12,7)	0.028	0,71	0.323	8,4	0.323 ÷ 0.370	8,2 ÷ 9,4	R11.0/80-013	013-S	1/80-016 ÷ 012	Minirol 800					
			0.331	8,4	0.323 ÷ 0.370	8,2 ÷ 9,4	R11.0/80-012	012-011-S							
			0.334	8,5	0.334 ÷ 0.378	8,4 ÷ 9,6	R11.0/80-011	012-011-S							
			0.342	8,7	0.345 ÷ 0.386	8,6 ÷ 9,8	R11.0/80-010	010-S							
			0.356	9,0	0.346 ÷ 0.394	8,8 ÷ 10,0	R11.0/80-009	009-S							
16	0.065	1,65	0.354	9,4	0.354 ÷ 0.409	9,0 ÷ 10,4			1/80-011 ÷ 09	Minirol 800					
			0.374	9,5	0.362 ÷ 0.417	9,2 ÷ 10,6									
			0.384	9,7	0.370 ÷ 0.425	9,4 ÷ 10,8									

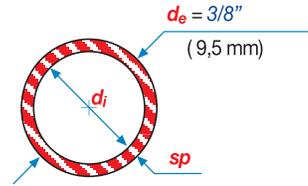
R/13

Per tubi di piccolo diametro e piastre tubiere di piccola spessore

For small diameter tubes and low thickness tube-sheets

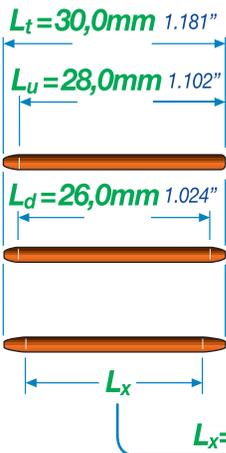
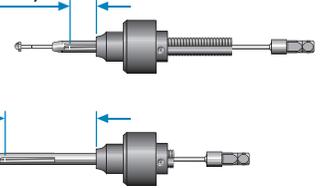
Pour tubes de petit diamètre et plaques tubulaires de petite épaisseur

Für Rohre mit kleinem Durchmesser und Rohrböden mit geringer Stärke



$RE_{min} = 5/8''$ (15,9 mm)

$RE_{max} = 2''$ (50,8 mm)



Codice d'esempio per ordinazione mandrini

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

d_e 3/8" - 19 B.W.G.

STD → **R13.0 -021**

DLS → **R13.0 -021-DLS**

DLX → **R13.0 -021-DLX-L_x**

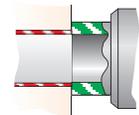
$L_x = 20,0 \div 25,0$ mm 0.787" ÷ 0.984"

Testa di battuta

Thrust collar
Tête de butée
Anschlagkopf



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



V=0

Tubo
Tube
Tube
Rohr

Mandratrici consigliate

Suggested rolling machines
Dudgeonneuses conseillées
Empfohlene Rohreinwalzanlagen

d_e inches mm	sp		d_i		Espansione Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	inches mm	Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
	B.W.G.	inches	mm	inches	mm	inches	mm	Nr.	Nr.			
3/8" (9,5)	16	0.065	1,65	0.236	6,0	0.228 ÷ 0.260	5,8 ÷ 6,6	R13.0-027	027-L	1/4" (6,3)	F90 + MP/4	Minirol 1300
				0.245	6,2	0.236 ÷ 0.268	6,0 ÷ 6,8	R13.0-026	026-L			
				0.252	6,4	0.244 ÷ 0.276	6,2 ÷ 7,0	R13.0-025	025-L			
				0.259	6,5	0.252 ÷ 0.283	6,4 ÷ 7,2	R13.0-024	024-L			
	17	0.058	1,47	0.268	6,8	0.260 ÷ 0.291	6,6 ÷ 7,4	R13.0-023	023-L			
				0.277	7,0	0.268 ÷ 0.307	6,8 ÷ 7,8	R13.0-022	022-L			
				0.291	7,3	0.275 ÷ 0.315	7,0 ÷ 8,0	R13.0-021	021-L			
	18	0.049	1,24	0.295	7,5	0.283 ÷ 0.323	7,2 ÷ 8,2	R13.0-020	020-L			
				0.305	7,7	0.291 ÷ 0.330	7,4 ÷ 8,4	R13.0-019	019-L			
	19	0.042	1,07	0.311	7,9	0.299 ÷ 0.338	7,6 ÷ 8,6	R13.0-018	018-L			
0.319				8,1	0.307 ÷ 0.346	7,8 ÷ 8,8	R13.0-017-M	017-L				



Consigliate
Suggested
Conseillées
Empfehlung

Possibili
Possible
Possibles
Variationsmöglichkeiten

R/13/100

Per tubi di piccolo diametro e piastre tubiere di grosso spessore

For small diameter tubes and thick tube-sheets

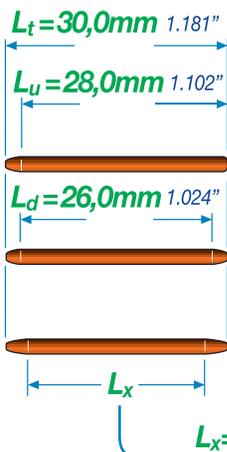
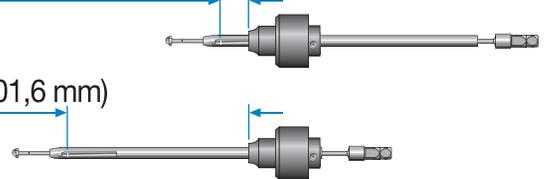
Pour tubes de petit diamètre et plaques tubulaires de grande épaisseur

Für Rohre mit - kleinem - Durchmesser und Rohrböden mit großer Stärke



$RE_{min} = 5/8" (15,9 \text{ mm})$

$RE_{max} = 4" (101,6 \text{ mm})$



Codice d'esempio per ordinazione mandrini

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

$d_e 3/8" - 17 \text{ B.W.G.}$

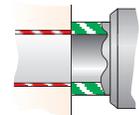
- STD** → **R13.0/100 -024**
- DLS** → **R13.0/100 -024-DLS**
- DLX** → **R13.0/100 -024-DLX-L_x**

Testa di battuta

Thrust collar
Tête de butée
Anschlagkopf



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



V=0

Tubo
Tube
Tube
Rohr

Mandrinatrici consigliate
Suggested rolling machines
Dudgeonneuses conseillées
Empfohlene Rohreinwalzanlagen

d_e inches mm	sp		d_i		Espansione Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	inches mm	Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
	B.W.G.	inches	mm	inches	mm	inches	mm	Nr.	Nr.			
3/8" (9,5)	16	0.065	1,65	0.236	6,0	0.228 ÷ 0.260	5,8 ÷ 6,6	R13.0/100-027	027-L	2/100-027 ÷ 026	F90 + MP/4	Minirol 1300
				0.245	6,2	0.236 ÷ 0.268	6,0 ÷ 6,8	R13.0/100-026	026-L			
				0.252	6,4	0.244 ÷ 0.276	6,2 ÷ 7,0	R13.0/100-025	025-L			
	17	0.058	1,47	0.259	6,5	0.252 ÷ 0.283	6,4 ÷ 7,2	R13.0/100-024	024-L	2/100-025 ÷ 023		
				0.268	6,8	0.260 ÷ 0.291	6,6 ÷ 7,4	R13.0/100-023	023-L			
				0.277	7,0	0.268 ÷ 0.307	6,8 ÷ 7,8	R13.0/100-022	022-L			
	18	0.049	1,24	0.291	7,3	0.275 ÷ 0.315	7,0 ÷ 8,0	R13.0/100-021	021-L	2/100-022 ÷ 021		
				0.295	7,5	0.283 ÷ 0.323	7,2 ÷ 8,2	R13.0/100-020	020-L			
				0.305	7,7	0.291 ÷ 0.330	7,4 ÷ 8,4	R13.0/100-019	019-L			
				0.311	7,9	0.299 ÷ 0.338	7,6 ÷ 8,6	R13.0/100-018	018-L			
19	0.042	1,07	0.319	8,1	0.307 ÷ 0.346	7,8 ÷ 8,8	R13.0/100-017-M	017-L	2/100-018 ÷ 017		Minirol 2100	

Consigliate
Suggested
Conseillées
Empfehlung

Possibili
Possible
Possibles
Variationsmöglichkeiten

