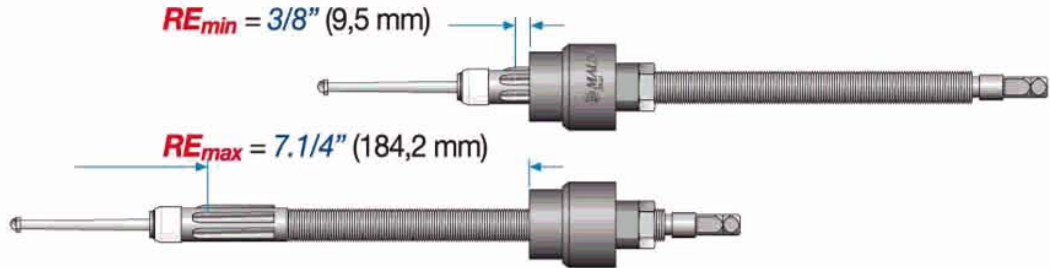




## Per tubi di sottile spessore in materiale ad alta tecnologia e piastre tubiere di grosso spessore

For thin tubes made of high-tech materials and thick tube-sheets  
Pour tubes d'épaisseur fine en matériau à haute technologie et plaques tubulaires de grande épaisseur  
Für Rohre mit geringer Wandstärke aus High-Tech-Materialien und Rohrböden mit großer Stärke



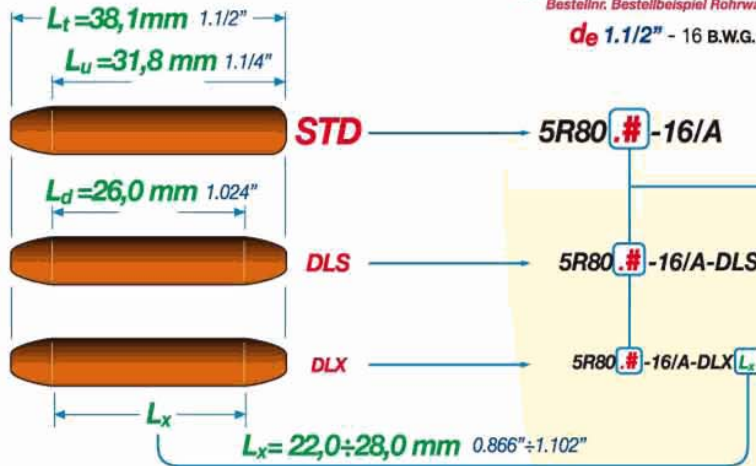
### Codice d'esempio per ordinazione mandrini

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

de 1.1/2" - 16 B.W.G.

### Testa di battuta

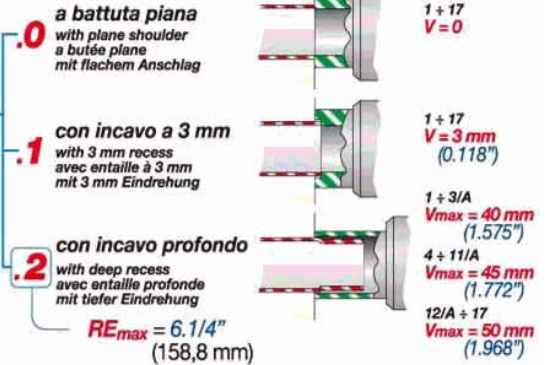
Thrust collar  
Tête de butée  
Anschlagkopf



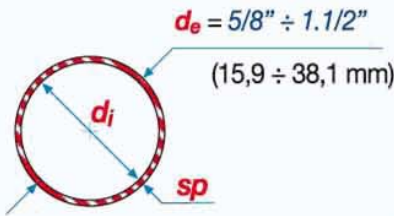
**STD** → 5R80.#-16/A

**DLS** → 5R80.#-16/A-DLS

**DLX** → 5R80.#-16/A-DLX(L<sub>x</sub>)



Tubo Tube Rohr		Expansione 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	sp	di								Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch
inches mm	B.W.G. inches mm	inches mm	inches mm	inches mm	inches mm	Cod.	Cod.	Cod.	inches mm		
5/8" (15,9)	20	0.035	0,89	0.555	14,1	5R80.#-1-M	MR5	8-1÷1/A	3/8" (9,5)	F90 MP/2 M4/V MS/60 Matex	Minirol 500 Macrol 1350
	21	0.032	0,81	0.561	14,3						
	22	0.028	0,71	0.569	14,5						
	23	0.025	0,64	0.575	14,6	5R80.#-1/A-M	MR6				
	24	0.022	0,56	0.581	14,8	0.535 ÷ 0.602	13,6 ÷ 15,3				
3/4" (19,0)	16	0.065	1,65	0.620	15,7	5R80.#-2/A	MR6	8-2/A÷3/A	3/8" (9,5)	F90 M4/V MP/1 MS/60 Matex	Macrol 750
	17	0.058	1,47	0.634	16,0						
	18	0.049	1,24	0.652	16,5	5R80.#-3	MR7				
	19	0.042	1,07	0.666	16,8	5R80.#-3/A	MR8				
	20	0.035	0,89	0.680	17,2	5R80.#-4	MR7				
	21	0.032	0,81	0.686	17,4						
	22	0.028	0,71	0.694	17,6	5R80.#-5	MR8				
	23	0.025	0,64	0.700	17,7						
	24	0.022	0,56	0.706	17,9						
								8-4÷5			



Tubo  
Tube  
Tube  
Rohr

Mandrinatrici consigliate

Suggested rolling machines  
Dudgeonneuses conseillées  
Empfohlene Rohreinwalzanlagen

$d_e$ inches mm	B.W.G.	$sp$		$d_i$		Espansione Expansion Expansion Walzbereich		Mandrino Tube expander Dudgeon Rohrwalzen	Rulli Rolls Galets Rollen	Spina Mandrel Broche Dorn	$\square$ inches mm	Elettriche Electrical Electriques elektrisch	Pneumatiche Pneumatic Pneumatiques pneumatisch				
		inches	mm	inches	mm	inches	mm	Cod.	Cod.	Cod.							
7/8" (22,2)	16	0.065	1,65	0.745	18,9	0.720 ÷ 0.807	18,3 ÷ 20,5	5R80.#-6-M	MR7	8-6÷6/A	3/8" (9,5)	F90 M4/V M4/L MS/60 MP/1	Macrol 750				
	17	0.058	1,47	0.759	19,2												
	18	0.049	1,24	0.777	19,7	0.736 ÷ 0.823	18,7 ÷ 20,9	5R80.#-6/A-M	MR8								
	19	0.042	1,07	0.791	20,0												
	20	0.035	0,89	0.805	20,4	0.760 ÷ 0.850	19,3 ÷ 21,6	5R80.#-7/A-M	MR9								
	21	0.032	0,81	0.811	20,6												
	22	0.028	0,71	0.819	20,8	0.795 ÷ 0.886	20,2 ÷ 22,5	5R80.#-8-M	MR10								
	23	0.025	0,64	0.825	20,9												
24	0.022	0,56	0.831	21,1													
1" (25,4)	16	0.065	1,65	0.870	22,1	0.842 ÷ 0.941	21,4 ÷ 23,9	5R80.#-9/A	MR11	8-9/A÷11/A	3/8" (9,5)	F90 M4/V M4/L MS/60	Macrol 750				
	17	0.058	1,47	0.884	22,4												
	18	0.049	1,24	0.902	22,9	0.866 ÷ 0.964	22,0 ÷ 24,5	5R80.#-10	MR12								
	19	0.042	1,07	0.916	23,2												
	20	0.035	0,89	0.930	23,6	0.894 ÷ 0.992	22,7 ÷ 25,2	5R80.#-11	MR14								
	21	0.032	0,81	0.936	23,8												
	22	0.028	0,71	0.944	24,0	0.921 ÷ 1.020	23,4 ÷ 25,9	5R80.#-11/A	MR15								
	23	0.025	0,64	0.950	24,1												
24	0.022	0,56	0.956	24,3													
1.1/8" (28,5)	18	0.049	1,24	1.027	26,0	0.992 ÷ 1.116	25,2 ÷ 28,6	5R80.#-12/A-M	MR15	8-12/A÷14	1/2" (12,7)	F90 M4/V M4/L MS/60	Macrol 750				
	19	0.042	1,07	1.041	26,3												
	20	0.035	0,89	1.055	26,7												
	21	0.032	0,81	1.061	26,9												
22	0.028	0,71	1.069	27,1													
1.1/4" (31,8)	16	0.065	1,65	1.120	28,5	1.071 ÷ 1.220	27,2 ÷ 31,0	5R80.#-13/A	MR19	8-12/A÷14	1/2" (12,7)	F90 M4/L M4/V	Macrol 450				
	17	0.058	1,47	1.134	28,8												
	18	0.049	1,24	1.152	29,3	1.102 ÷ 1.251	28,0 ÷ 31,8	5R80.#-14	MR21								
	19	0.042	1,07	1.166	29,6												
	20	0.035	0,89	1.180	30,0	1.260 ÷ 1.406	32,0 ÷ 35,7	5R80.#-16	MR28-A								
	21	0.032	0,81	1.186	30,2												
22	0.028	0,71	1.194	30,4													
1.1/2" (38,1)	15	0.072	1,83	1.356	34,4	1.299 ÷ 1.449	33,0 ÷ 36,8	5R80.#-16/A	MR29	8-16÷17	1/2" (12,7)	F90 M4/L M4/V	Macrol 450				
	16	0.065	1,65	1.370	34,8												
	17	0.058	1,47	1.384	35,1	1.358 ÷ 1.508	34,5 ÷ 38,3	5R80.#-17	MR30-S								
	18	0.049	1,24	1.402	35,6												
	19	0.042	1,07	1.416	35,9												
	20	0.035	0,89	1.430	36,3												
	21	0.032	0,81	1.436	36,5												
22	0.028	0,71	1.444	36,7													

# 5R/70/S

5 Rulli  
5 Rolls  
5 Galets  
5 Rollen



## Per tubi di sottile spessore in materiale ad alta tecnologia e piastre tubiere di piccolo spessore

For thin tubes made of high-tech materials and small thickness tube-sheets

Pour tubes d'épaisseur fine en matériau à haute technologie et plaques tubulaires de faible épaisseur

Für Rohre mit geringer Wandstärke aus High-Tech-Materialien und Rohrböden mit geringer Stärke



$L_t = 31,0 \text{ mm}$  1.220"

$L_u = 25,0 \text{ mm}$  0.984"

$L_d = 19,0 \text{ mm}$  0.748"

Codice d'esempio per ordinazione mandrini

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

$d_e 3/4" - 22 \text{ B.W.G.}$

**STD** → 5R70/S.#-5

**DLS** → 5R70/S.#-5-DLS

**DLX** → 5R70/S.#-5-DLX  $L_x$

$L_x = 15,0 \div 21,0 \text{ mm}$  0.590" ÷ 0.827"

**DLX** → 5R70/S.#-5-DLX  $L_x$

$L_x = 10,0 \div 14,0 \text{ mm}$  0.394" ÷ 0.551"

**BCR** → 5R70/S.3-5-BCR  $L_r$

$L_r = 13,0 \div 23,0 \text{ mm}$  0.512" ÷ 0.905"

# 5R/80/S

5 Rulli  
5 Rolls  
5 Galets  
5 Rollen

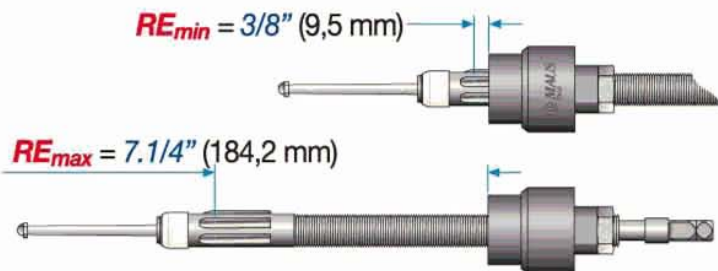


## Per tubi di sottile spessore in materiale ad alta tecnologia e piastre tubiere di grosso spessore

For thin tubes made of high-tech materials and thick tube-sheets

Pour tubes d'épaisseur fine en matériau à haute technologie et plaques tubulaires de forte épaisseur

Für Rohre mit geringer Wandstärke aus High-Tech-Materialien und Rohrböden mit großer Stärke



$L_t = 31,0 \text{ mm}$  1.220"

$L_u = 25,0 \text{ mm}$  0.984"

$L_d = 19,0 \text{ mm}$  0.748"

Codice d'esempio per ordinazione mandrini

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

$d_e 1" - 20 \text{ B.W.G.}$

**STD** → 5R80/S.#-11

**DLS** → 5R80/S.#-11-DLS

**DLX** → 5R80/S.#-11-DLX  $L_x$

$L_x = 15,0 \div 21,0 \text{ mm}$  0.590" ÷ 0.827"

**DLX** → 5R80/S.#-11-DLX  $L_x$

$L_x = 10,0 \div 14,0 \text{ mm}$  0.394" ÷ 0.551"