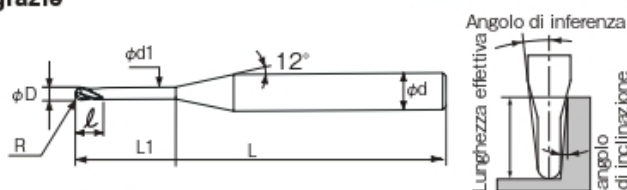


Fresa GS a collo lungo Hard Ball

- La scelta ottimale per lavorazioni di micro fresatura di acciai da stampi e matrici.
- È possibile soddisfare qualsiasi tipo di esigenze grazie alla gamma dimensionale disponibile.



LIST 9428

Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9428/00.20/0.5-4	0.1	0.5	4	0.2	0.2	45	0.18	11.49	0.52	0.54	0.58	0.63	●
9428/00.20/01-4	0.1	1	4	0.2	0.2	45	0.18	10.92	1.04	1.08	1.18	1.30	●
9428/00.20/1.5-4	0.1	1.5	4	0.2	0.2	45	0.18	10.40	1.56	1.63	1.78	1.96	●
9428/00.20/02-4	0.1	2	4	0.2	0.2	45	0.18	9.93	2.08	2.17	2.37	2.62	●
9428/00.20/2.5-4	0.1	2.5	4	0.2	0.2	45	0.18	9.51	2.60	2.71	2.97	3.29	●
9428/00.20/03-4	0.1	3	4	0.2	0.2	45	0.18	9.11	3.12	3.26	3.57	3.95	●
9428/00.30/01-4	0.15	1	4	0.3	0.3	45	0.28	10.94	1.04	1.08	1.17	1.28	●
9428/00.30/1.5-4	0.15	1.5	4	0.3	0.3	45	0.28	10.41	1.56	1.62	1.77	1.94	●
9428/00.30/02-4	0.15	2	4	0.3	0.3	45	0.28	9.93	2.08	2.17	2.36	2.61	●
9428/00.30/2.5-4	0.15	2.5	4	0.3	0.3	45	0.28	9.49	2.60	2.71	2.96	3.27	●
9428/00.30/03-4	0.15	3	4	0.3	0.3	45	0.28	9.09	3.12	3.26	3.56	3.93	●
9428/00.40/01-4	0.2	1	4	0.4	0.4	45	0.37	10.97	1.03	1.07	1.16	1.26	●
9428/00.40/1.5-4	0.2	1.5	4	0.4	0.4	45	0.37	10.42	1.56	1.62	1.76	1.93	●
9428/00.40/02-4	0.2	2	4	0.4	0.4	45	0.37	9.93	2.08	2.16	2.35	2.59	●
9428/00.40/2.5-4	0.2	2.5	4	0.4	0.4	45	0.37	9.48	2.60	2.71	2.95	3.25	●
9428/00.40/03-4	0.2	3	4	0.4	0.4	45	0.37	9.06	3.12	3.25	3.55	3.92	●
9428/00.40/04-4	0.2	4	4	0.4	0.4	45	0.37	8.34	4.16	4.34	4.75	5.25	●
9428/00.40/05-4	0.2	5	4	0.4	0.4	45	0.37	7.72	5.21	5.43	5.94	6.57	●
9428/00.50/1.5-4	0.25	1.5	4	0.5	0.5	45	0.47	10.43	1.55	1.61	1.75	1.91	●
9428/00.50/02-4	0.25	2	4	0.5	0.5	45	0.47	9.92	2.07	2.16	2.34	2.57	●
9428/00.50/03-4	0.25	3	4	0.5	0.5	45	0.47	9.04	3.12	3.25	3.54	3.90	●
9428/00.50/04-4	0.25	4	4	0.5	0.5	45	0.47	8.30	4.16	4.34	4.74	5.23	●
9428/00.50/05-4	0.25	5	4	0.5	0.5	45	0.47	7.67	5.20	5.43	5.93	6.56	●
9428/00.50/06-4	0.25	6	4	0.5	0.5	45	0.47	7.13	6.25	6.51	7.13	7.88	●
9428/00.50/08-4	0.25	8	4	0.5	0.5	45	0.47	6.24	8.33	8.69	9.52	10.54	●

Condizioni di taglio

► B-88

LIST 9428 Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9428/00.60/02-4	0.3	2	4	0.6	0.6	45	0.56	9.92	2.07	2.15	2.34	2.56	●
9428/00.60/03-4	0.3	3	4	0.6	0.6	45	0.56	9.01	3.12	3.24	3.53	3.89	●
9428/00.60/04-4	0.3	4	4	0.6	0.6	45	0.56	8.25	4.16	4.33	4.73	5.21	●
9428/00.60/05-4	0.3	5	4	0.6	0.6	45	0.56	7.61	5.20	5.42	5.92	6.54	●
9428/00.60/06-4	0.3	6	4	0.6	0.6	45	0.56	7.07	6.24	6.51	7.12	7.87	●
9428/00.60/07-4	0.3	7	4	0.6	0.6	45	0.56	6.59	7.29	7.60	8.32	9.20	●
9428/00.60/08-4	0.3	8	4	0.6	0.6	45	0.56	6.17	8.33	8.69	9.51	10.52	●
9428/00.60/10-4	0.3	10	4	0.6	0.6	45	0.56	5.48	10.42	10.87	11.91	13.18	●
9428/00.80/02-4	0.4	2	4	0.8	1.4	45	0.76	9.91	2.07	2.14	2.32	2.53	●
9428/00.80/03-4	0.4	3	4	0.8	1.4	45	0.76	8.95	3.11	3.23	3.51	3.85	●
9428/00.80/04-4	0.4	4	4	0.8	1.4	45	0.76	8.16	4.15	4.32	4.71	5.18	●
9428/00.80/05-4	0.4	5	4	0.8	1.4	45	0.76	7.50	5.20	5.41	5.91	6.51	●
9428/00.80/06-4	0.4	6	4	0.8	1.4	45	0.76	6.94	6.24	6.50	7.10	7.84	●
9428/00.80/07-4	0.4	7	4	0.8	1.4	45	0.76	6.45	7.28	7.59	8.30	9.16	●
9428/00.80/08-4	0.4	8	4	0.8	1.4	45	0.76	6.03	8.33	8.68	9.50	10.49	●
9428/00.80/10-4	0.4	10	4	0.8	1.4	45	0.76	5.33	10.41	10.86	11.89	13.14	●
9428/01.00/03-4	0.5	3	4	1	1.5	45	0.96	8.88	3.11	3.22	3.49	3.82	●
9428/01.00/04-4	0.5	4	4	1	1.5	45	0.96	8.06	4.15	4.31	4.69	5.15	●
9428/01.00/05-4	0.5	5	4	1	1.5	45	0.96	7.37	5.19	5.40	5.89	6.48	●
9428/01.00/06-4	0.5	6	4	1	1.5	45	0.96	6.80	6.24	6.49	7.08	7.80	●
9428/01.00/07-4	0.5	7	4	1	1.5	45	0.96	6.30	7.28	7.58	8.28	9.13	●
9428/01.00/08-4	0.5	8	4	1	1.5	45	0.96	5.87	8.32	8.67	9.48	10.46	●
9428/01.00/09-4	0.5	9	4	1	1.5	45	0.96	5.50	9.36	9.76	10.67	11.79	●
9428/01.00/10-4	0.5	10	4	1	1.5	45	0.96	5.17	10.41	10.85	11.87	13.11	●

Condizioni di taglio ► B-76



Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9428/01.00/12-4	0.5	12	4	1	1.5	45	0.96	4.62	12.49	13.03	14.26	15.77	●
9428/01.00/14-4	0.5	14	4	1	1.5	50	0.96	4.17	14.58	15.21	16.66	18.42	●
9428/01.00/16-4	0.5	16	4	1	1.5	50	0.96	3.80	16.66	17.39	19.05	21.08	●
9428/01.00/18-4	0.5	18	4	1	1.5	55	0.96	3.49	18.75	19.57	21.44	23.73	●
9428/01.00/20-4	0.5	20	4	1	1.5	55	0.96	3.23	20.83	21.74	23.84	26.39	●
9428/01.00/22-4	0.5	22	4	1	1.5	60	0.96	3.01	22.92	23.92	26.23	29.04	●
9428/01.20/06-4	0.6	6	4	1.2	1.6	45	1.15	6.64	6.23	6.48	7.06	7.77	●
9428/01.20/08-4	0.6	8	4	1.2	1.6	45	1.15	5.70	8.32	8.66	9.46	10.43	●
9428/01.20/10-4	0.6	10	4	1.2	1.6	45	1.15	5.00	10.40	10.84	11.85	13.08	●
9428/01.20/12-4	0.6	12	4	1.2	1.6	45	1.15	4.44	12.49	13.02	14.24	15.74	●
9428/01.20/16-4	0.6	16	4	1.2	1.6	50	1.15	3.64	16.66	17.38	19.03	21.04	●
9428/01.40/08-4	0.7	8	4	1.4	1.7	45	1.35	5.52	8.31	8.65	9.44	10.39	●
9428/01.40/12-4	0.7	12	4	1.4	1.7	45	1.35	4.26	12.48	13.01	14.22	15.70	●
9428/01.40/16-4	0.7	16	4	1.4	1.7	50	1.35	3.47	16.66	17.37	19.01	21.01	●
9428/01.50/08-4	0.75	8	4	1.5	1.8	45	1.45	5.42	8.31	8.65	9.43	10.38	●
9428/01.50/10-4	0.75	10	4	1.5	1.8	45	1.45	4.71	10.40	10.83	11.82	13.03	●
9428/01.50/12-4	0.75	12	4	1.5	1.8	45	1.45	4.17	12.48	13.01	14.21	15.69	●
9428/01.50/14-4	0.75	14	4	1.5	1.8	50	1.45	3.73	14.57	15.19	16.61	18.34	●
9428/01.50/16-4	0.75	16	4	1.5	1.8	50	1.45	3.38	16.65	17.36	19.00	21.00	●
9428/01.50/18-4	0.75	18	4	1.5	1.8	55	1.45	3.09	18.74	19.54	21.39	23.65	●
9428/01.50/20-4	0.75	20	4	1.5	1.8	55	1.45	2.85	20.82	21.72	23.79		●
9428/01.60/08-4	0.8	8	4	1.6	1.8	45	1.55	5.32	8.31	8.64	9.42	10.36	●
9428/01.60/12-4	0.8	12	4	1.6	1.8	45	1.55	4.07	12.48	13.00	14.20	15.67	●
9428/01.60/16-4	0.8	16	4	1.6	1.8	50	1.55	3.29	16.65	17.36	18.99	20.98	●

LIST 9428 Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9428/01.60/20-4	0.8	20	4	1.6	1.8	55	1.55	2.76	20.82	21.72	23.78		●
9428/01.80/08-4	0.9	8	4	1.8	1.9	45	1.75	5.10	8.30	8.64	9.40	10.33	●
9428/01.80/12-4	0.9	12	4	1.8	1.9	45	1.75	3.86	12.48	12.99	14.19	15.64	●
9428/01.80/16-4	0.9	16	4	1.8	1.9	50	1.75	3.10	16.65	17.35	18.97	20.95	●
9428/01.80/20-4	0.9	20	4	1.8	1.9	55	1.75	2.59	20.82	21.71	23.76		●
9428/02.00/04-4	1	4	4	2	2	45	1.95	7.33	4.13	4.27	4.59	4.99	●
9428/02.00/06-4	1	6	4	2	2	45	1.95	5.85	6.21	6.45	6.99	7.64	●
9428/02.00/08-4	1	8	4	2	2	45	1.95	4.87	8.30	8.63	9.38	10.30	●
9428/02.00/10-4	1	10	4	2	2	45	1.95	4.16	10.39	10.81	11.77	12.95	●
9428/02.00/12-4	1	12	4	2	2	45	1.95	3.64	12.47	12.98	14.17	15.61	●
9428/02.00/14-4	1	14	4	2	2	50	1.95	3.23	14.56	15.16	16.56	18.26	●
9428/02.00/16-4	1	16	4	2	2	50	1.95	2.90	16.64	17.34	18.95		●
9428/02.00/18-4	1	18	4	2	2	55	1.95	2.64	18.73	19.52	21.35		●
9428/02.00/20-4	1	20	4	2	2	55	1.95	2.41	20.81	21.70	23.74		●
9428/02.00/22-4	1	22	4	2	2	60	1.95	2.23	22.90	23.88	26.13		●
9428/02.00/25-4	1	25	4	2	2	65	1.95	1.99	26.03	27.15			●
9428/02.00/30-4	1	30	4	2	2	70	1.95	1.70	31.24	32.60			●
9428/00.20/0.5-6	0.1	0.5	6	0.2	0.2	50	0.18	11.66	0.52	0.54	0.58	0.63	●
9428/00.20/01-6	0.1	1	6	0.2	0.2	50	0.18	11.27	1.04	1.08	1.18	1.30	●
9428/00.20/1.5-6	0.1	1.5	6	0.2	0.2	50	0.18	10.90	1.56	1.63	1.78	1.96	●
9428/00.20/02-6	0.1	2	6	0.2	0.2	50	0.18	10.56	2.08	2.17	2.37	2.62	●
9428/00.30/01-6	0.15	1	6	0.3	0.3	50	0.28	11.29	1.04	1.08	1.17	1.28	●
9428/00.30/1.5-6	0.15	1.5	6	0.3	0.3	50	0.28	10.92	1.56	1.62	1.77	1.94	●
9428/00.30/02-6	0.15	2	6	0.3	0.3	50	0.28	10.57	2.08	2.17	2.36	2.61	●

Condizioni di taglio ► B-76



Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	Lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9428/00.40/01-6	0.2	1	6	0.4	0.4	50	0.37	11.32	1.03	1.07	1.16	1.26	●
9428/00.40/1.5-6	0.2	1.5	6	0.4	0.4	50	0.37	10.94	1.56	1.62	1.76	1.93	●
9428/00.40/02-6	0.2	2	6	0.4	0.4	50	0.37	10.58	2.08	2.16	2.35	2.59	●
9428/00.40/2.5-6	0.2	2.5	6	0.4	0.4	50	0.37	10.25	2.60	2.71	2.95	3.25	●
9428/00.40/03-6	0.2	3	6	0.4	0.4	50	0.37	9.93	3.12	3.25	3.55	3.92	●
9428/00.50/1.5-6	0.25	1.5	6	0.5	0.5	50	0.47	10.95	1.55	1.61	1.75	1.91	●
9428/00.50/02-6	0.25	2	6	0.5	0.5	50	0.47	10.59	2.07	2.16	2.34	2.57	●
9428/00.50/03-6	0.25	3	6	0.5	0.5	50	0.47	9.93	3.12	3.25	3.54	3.90	●
9428/00.50/04-6	0.25	4	6	0.5	0.5	50	0.47	9.35	4.16	4.34	4.74	5.23	●
9428/00.50/05-6	0.25	5	6	0.5	0.5	50	0.47	8.83	5.20	5.43	5.93	6.56	●
9428/00.50/06-6	0.25	6	6	0.5	0.5	50	0.47	8.36	6.25	6.51	7.13	7.88	●
9428/00.50/08-6	0.25	8	6	0.5	0.5	50	0.47	7.57	8.33	8.69	9.52	10.54	●
9428/00.60/02-6	0.3	2	6	0.6	0.6	50	0.56	10.60	2.07	2.15	2.34	2.56	●
9428/00.60/03-6	0.3	3	6	0.6	0.6	50	0.56	9.93	3.12	3.24	3.53	3.89	●
9428/00.60/04-6	0.3	4	6	0.6	0.6	50	0.56	9.33	4.16	4.33	4.73	5.21	●
9428/00.60/05-6	0.3	5	6	0.6	0.6	50	0.56	8.81	5.20	5.42	5.92	6.54	●
9428/00.60/06-6	0.3	6	6	0.6	0.6	50	0.56	8.34	6.24	6.51	7.12	7.87	●
9428/00.60/08-6	0.3	8	6	0.6	0.6	50	0.56	7.53	8.33	8.69	9.51	10.52	●
9428/00.60/10-6	0.3	10	6	0.6	0.6	50	0.56	6.87	10.42	10.87	11.91	13.18	●
9428/00.80/02-6	0.4	2	6	0.8	1.4	50	0.76	10.62	2.07	2.14	2.32	2.53	●
9428/00.80/03-6	0.4	3	6	0.8	1.4	50	0.76	9.92	3.11	3.23	3.51	3.85	●
9428/00.80/04-6	0.4	4	6	0.8	1.4	50	0.76	9.31	4.15	4.32	4.71	5.18	●
9428/00.80/05-6	0.4	5	6	0.8	1.4	50	0.76	8.77	5.20	5.41	5.91	6.51	●
9428/00.80/06-6	0.4	6	6	0.8	1.4	50	0.76	8.28	6.24	6.50	7.10	7.84	●

Condizioni di taglio

► B-76

Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9428/00.80/08-6	0.4	8	6	0.8	1.4	50	0.76	7.46	8.33	8.68	9.50	10.49	●
9428/00.80/10-6	0.4	10	6	0.8	1.4	50	0.76	6.78	10.41	10.86	11.89	13.14	●
9428/01.00/03-6	0.5	3	6	1	1.5	50	0.96	9.91	3.11	3.22	3.49	3.82	●
9428/01.00/04-6	0.5	4	6	1	1.5	50	0.96	9.28	4.15	4.31	4.69	5.15	●
9428/01.00/05-6	0.5	5	6	1	1.5	50	0.96	8.72	5.19	5.40	5.89	6.48	●
9428/01.00/06-6	0.5	6	6	1	1.5	50	0.96	8.22	6.24	6.49	7.08	7.80	●
9428/01.00/08-6	0.5	8	6	1	1.5	50	0.96	7.38	8.32	8.67	9.48	10.46	●
9428/01.00/10-6	0.5	10	6	1	1.5	50	0.96	6.70	10.41	10.85	11.87	13.11	●
9428/01.00/12-6	0.5	12	6	1	1.5	50	0.96	6.13	12.49	13.03	14.26	15.77	●
9428/01.00/14-6	0.5	14	6	1	1.5	60	0.96	5.65	14.58	15.21	16.66	18.42	●
9428/01.00/16-6	0.5	16	6	1	1.5	60	0.96	5.24	16.66	17.39	19.05	21.08	●
9428/01.00/18-6	0.5	18	6	1	1.5	60	0.96	4.88	18.75	19.57	21.44	23.73	●
9428/01.00/20-6	0.5	20	6	1	1.5	60	0.96	4.57	20.83	21.74	23.84	26.39	●
9428/01.00/22-6	0.5	22	6	1	1.5	60	0.96	4.30	22.92	23.92	26.23	29.04	●
9428/01.20/06-6	0.6	6	6	1.2	1.6	50	1.15	8.16	6.23	6.48	7.06	7.77	●
9428/01.20/08-6	0.6	8	6	1.2	1.6	50	1.15	7.30	8.32	8.66	9.46	10.43	●
9428/01.20/10-6	0.6	10	6	1.2	1.6	50	1.15	6.61	10.40	10.84	11.85	13.08	●
9428/01.20/12-6	0.6	12	6	1.2	1.6	50	1.15	6.03	12.49	13.02	14.24	15.74	●
9428/01.20/16-6	0.6	16	6	1.2	1.6	60	1.15	5.13	16.66	17.38	19.03	21.04	●
9428/01.50/08-6	0.75	8	6	1.5	1.8	50	1.45	7.17	8.31	8.65	9.43	10.38	●
9428/01.50/10-6	0.75	10	6	1.5	1.8	50	1.45	6.46	10.40	10.83	11.82	13.03	●
9428/01.50/12-6	0.75	12	6	1.5	1.8	50	1.45	5.87	12.48	13.01	14.21	15.69	●
9428/01.50/16-6	0.75	16	6	1.5	1.8	60	1.45	4.97	16.65	17.36	19.00	21.00	●
9428/01.50/20-6	0.75	20	6	1.5	1.8	60	1.45	4.31	20.82	21.72	23.79	26.31	●

Condizioni di taglio ► B-76



Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9428/02.00/04-6	1	4	6	2	2	50	1.95	9.10	4.13	4.27	4.59	4.99	●
9428/02.00/06-6	1	6	6	2	2	50	1.95	7.87	6.21	6.45	6.99	7.64	●
9428/02.00/08-6	1	8	6	2	2	50	1.95	6.92	8.30	8.63	9.38	10.30	●
9428/02.00/10-6	1	10	6	2	2	50	1.95	6.18	10.39	10.81	11.77	12.95	●
9428/02.00/12-6	1	12	6	2	2	50	1.95	5.58	12.47	12.98	14.17	15.61	●
9428/02.00/14-6	1	14	6	2	2	60	1.95	5.09	14.56	15.16	16.56	18.26	●
9428/02.00/16-6	1	16	6	2	2	60	1.95	4.68	16.64	17.34	18.95	20.92	●
9428/02.00/18-6	1	18	6	2	2	60	1.95	4.32	18.73	19.52	21.35	23.57	●
9428/02.00/20-6	1	20	6	2	2	60	1.95	4.02	20.81	21.70	23.74	26.23	●
9428/02.00/22-6	1	22	6	2	2	60	1.95	3.76	22.90	23.88	26.13	28.88	●
9428/02.00/25-6	1	25	6	2	2	65	1.95	3.42	26.03	27.15	29.72	32.86	●
9428/02.00/30-6	1	30	6	2	2	70	1.95	2.98	31.24	32.60	35.70		●
9428/02.00/35-6	1	35	6	2	2	80	1.95	2.64	36.46	38.04	41.69		●
9428/03.00/08-6	1.5	8	6	3	2.5	60	2.9	6.28	8.28	8.58	9.28	10.14	●
9428/03.00/10-6	1.5	10	6	3	2.5	60	2.9	5.48	10.36	10.76	11.68	12.79	●
9428/03.00/12-6	1.5	12	6	3	2.5	60	2.9	4.87	12.45	12.94	14.07	15.45	●
9428/03.00/16-6	1.5	16	6	3	2.5	60	2.9	3.97	16.62	17.30	18.86	20.76	●
9428/03.00/20-6	1.5	20	6	3	2.5	65	2.9	3.35	20.79	21.66	23.64	26.07	●
9428/03.00/25-6	1.5	25	6	3	2.5	65	2.9	2.81	26.01	27.10	29.62		●
9428/03.00/30-6	1.5	30	6	3	2.5	70	2.9	2.41	31.22	32.55	35.61		●
9428/03.00/35-6	1.5	35	6	3	2.5	80	2.9	2.12	36.43	38.00	41.59		●
9428/04.00/10-6	2	10	6	4	3	65	3.9	4.47	10.34	10.72	11.58	12.64	●
9428/04.00/12-6	2	12	6	4	3	65	3.9	3.87	12.43	12.90	13.97	15.29	●
9428/04.00/16-6	2	16	6	4	3	65	3.9	3.05	16.60	17.25	18.76	20.60	●

Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9428/04.00/20-6	2	20	6	4	3	65	3.9	2.52	20.77	21.61	23.55		●
9428/04.00/25-6	2	25	6	4	3	70	3.9	2.06	25.99	27.06	29.53		●
9428/04.00/30-6	2	30	6	4	3	70	3.9	1.75	31.20	32.51			●
9428/04.00/35-6	2	35	6	4	3	80	3.9	1.52	36.41	37.95			●
9428/04.00/40-6	2	40	6	4	3	85	3.9	1.34	41.63	43.40			●
9428/04.00/45-6	2	45	6	4	3	90	3.9	1.20	46.84	48.85			●
9428/04.00/50-6	2	50	6	4	3	100	3.9	1.09	52.06	54.30			●
9428/05.00/20-6	2.5	20	6	5	3.5	70	4.9	1.44	20.75	21.57			●
9428/05.00/25-6	2.5	25	6	5	3.5	70	4.9	1.15	25.96	27.01			●
9428/05.00/30-6	2.5	30	6	5	3.5	80	4.9	0.96	31.18				●
9428/05.00/35-6	2.5	35	6	5	3.5	80	4.9	0.82	36.39				●
9428/06.00/30-6	3	30	6	6	6	80	5.75	–					●
9428/06.00/50-6	3	50	6	6	6	120	5.75	–					●

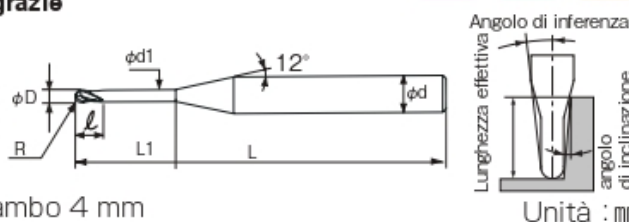
Tolleranza (mm)	
D	R
+0.006	+0.003
-0.014	-0.007

Tolleranza di diametro del gambo: 0/-0.005mm

Condizioni di taglio ► B-76

Fresa GS collo lungo Ball

- La scelta ottimale per lavorazioni di micro fresatura di acciai da stampi e matrici.
- È possibile soddisfare qualsiasi tipo di esigenze grazie alla gamma dimensionale disponibile.



LIST 9418 Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9418/00.20/0.5-4	0.1	0.5	4	0.2	0.2	45	0.18	11.49	0.52	0.54	0.58	0.63	●
9418/00.20/01-4	0.1	1	4	0.2	0.2	45	0.18	10.92	1.04	1.08	1.18	1.30	●
9418/00.20/1.5-4	0.1	1.5	4	0.2	0.2	45	0.18	10.40	1.56	1.63	1.78	1.96	●
9418/00.20/02-4	0.1	2	4	0.2	0.2	45	0.18	9.93	2.08	2.17	2.37	2.62	●
9418/00.20/2.5-4	0.1	2.5	4	0.2	0.2	45	0.18	9.51	2.60	2.71	2.97	3.29	●
9418/00.20/03-4	0.1	3	4	0.2	0.2	45	0.18	9.11	3.12	3.26	3.57	3.95	●
9418/00.30/01-4	0.15	1	4	0.3	0.3	45	0.28	10.94	1.04	1.08	1.17	1.28	●
9418/00.30/1.5-4	0.15	1.5	4	0.3	0.3	45	0.28	10.41	1.56	1.62	1.77	1.94	●
9418/00.30/02-4	0.15	2	4	0.3	0.3	45	0.28	9.93	2.08	2.17	2.36	2.61	●
9418/00.30/2.5-4	0.15	2.5	4	0.3	0.3	45	0.28	9.49	2.60	2.71	2.96	3.27	●
9418/00.30/03-4	0.15	3	4	0.3	0.3	45	0.28	9.09	3.12	3.26	3.56	3.93	●
9418/00.40/01-4	0.2	1	4	0.4	0.4	45	0.37	10.97	1.03	1.07	1.16	1.26	●
9418/00.40/1.5-4	0.2	1.5	4	0.4	0.4	45	0.37	10.42	1.56	1.62	1.76	1.93	●
9418/00.40/02-4	0.2	2	4	0.4	0.4	45	0.37	9.93	2.08	2.16	2.35	2.59	●
9418/00.40/2.5-4	0.2	2.5	4	0.4	0.4	45	0.37	9.48	2.60	2.71	2.95	3.25	●
9418/00.40/03-4	0.2	3	4	0.4	0.4	45	0.37	9.06	3.12	3.25	3.55	3.92	●
9418/00.50/04-4	0.2	4	4	0.4	0.4	45	0.37	8.34	4.16	4.34	4.75	5.25	●
9418/00.50/05-4	0.2	5	4	0.4	0.4	45	0.37	7.72	5.21	5.43	5.94	6.57	●
9418/00.50/1.5-4	0.25	1.5	4	0.5	0.5	45	0.47	10.43	1.55	1.61	1.75	1.91	●
9418/00.50/02-4	0.25	2	4	0.5	0.5	45	0.47	9.92	2.07	2.16	2.34	2.57	●
9418/00.50/03-4	0.25	3	4	0.5	0.5	45	0.47	9.04	3.12	3.25	3.54	3.90	●
9418/00.50/04-4	0.25	4	4	0.5	0.5	45	0.47	8.30	4.16	4.34	4.74	5.23	●
9418/00.50/05-4	0.25	5	4	0.5	0.5	45	0.47	7.67	5.20	5.43	5.93	6.56	●
9418/00.50/06-4	0.25	6	4	0.5	0.5	45	0.47	7.13	6.25	6.51	7.13	7.88	●
9418/00.50/08-4	0.25	8	4	0.5	0.5	45	0.47	6.24	8.33	8.69	9.52	10.54	●

Condizioni di taglio ► B-90

Disponibili fino ad esaurimento scorte.
Sostituite da ART. 9428

B-33

LIST 9418

Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9418/00.60/02-4	0.3	2	4	0.6	0.6	45	0.56	9.92	2.07	2.15	2.34	2.56	●
9418/00.60/03-4	0.3	3	4	0.6	0.6	45	0.56	9.01	3.12	3.24	3.53	3.89	●
9418/00.60/04-4	0.3	4	4	0.6	0.6	45	0.56	8.25	4.16	4.33	4.73	5.21	●
9418/00.60/05-4	0.3	5	4	0.6	0.6	45	0.56	7.61	5.20	5.42	5.92	6.54	●
9418/00.60/06-4	0.3	6	4	0.6	0.6	45	0.56	7.07	6.24	6.51	7.12	7.87	●
9418/01.60/07-4	0.3	7	4	0.6	0.6	45	0.56	6.59	7.29	7.60	8.32	9.20	●
9418/00.60/08-4	0.3	8	4	0.6	0.6	45	0.56	6.17	8.33	8.69	9.51	10.52	●
9418/00.60/10-4	0.3	10	4	0.6	0.6	45	0.56	5.48	10.42	10.87	11.91	13.18	●
9418/00.80/02-4	0.4	2	4	0.8	1.4	45	0.76	9.91	2.07	2.14	2.32	2.53	●
9418/00.80/03-4	0.4	3	4	0.8	1.4	45	0.76	8.95	3.11	3.23	3.51	3.85	●
9418/00.80/04-4	0.4	4	4	0.8	1.4	45	0.76	8.16	4.15	4.32	4.71	5.18	●
9418/00.80/05-4	0.4	5	4	0.8	1.4	45	0.76	7.50	5.20	5.41	5.91	6.51	●
9418/00.80/06-4	0.4	6	4	0.8	1.4	45	0.76	6.94	6.24	6.50	7.10	7.84	●
9418/00.80/07-4	0.4	7	4	0.8	1.4	45	0.76	6.45	7.28	7.59	8.30	9.16	●
9418/00.80/08-4	0.4	8	4	0.8	1.4	45	0.76	6.03	8.33	8.68	9.50	10.49	●
9418/00.80/10-4	0.4	10	4	0.8	1.4	45	0.76	5.33	10.41	10.86	11.89	13.14	●
9418/01.00/03-4	0.5	3	4	1	1.5	45	0.96	8.88	3.11	3.22	3.49	3.82	●
9418/01.00/04-4	0.5	4	4	1	1.5	45	0.96	8.06	4.15	4.31	4.69	5.15	●
9418/01.00/05-4	0.5	5	4	1	1.5	45	0.96	7.37	5.19	5.40	5.89	6.48	●
9418/01.00/06-4	0.5	6	4	1	1.5	45	0.96	6.80	6.24	6.49	7.08	7.80	●
9418/01.00/07-4	0.5	7	4	1	1.5	45	0.96	6.30	7.28	7.58	8.28	9.13	●
9418/01.00/08-4	0.5	8	4	1	1.5	45	0.96	5.87	8.32	8.67	9.48	10.46	●
9418/01.00/09-4	0.5	9	4	1	1.5	45	0.96	5.50	9.36	9.76	10.67	11.79	●
9418/01.00/10-4	0.5	10	4	1	1.5	45	0.96	5.17	10.41	10.85	11.87	13.11	●

Condizioni di taglio ► B-78



Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9418/01.00/12-4	0.5	12	4	1	1.5	45	0.96	4.62	12.49	13.03	14.26	15.77	●
9418/01.00/14-4	0.5	14	4	1	1.5	50	0.96	4.17	14.58	15.21	16.66	18.42	●
9418/01.00/16-4	0.5	16	4	1	1.5	50	0.96	3.80	16.66	17.39	19.05	21.08	●
9418/01.00/18-4	0.5	18	4	1	1.5	55	0.96	3.49	18.75	19.57	21.44	23.73	●
9418/01.00/20-4	0.5	20	4	1	1.5	55	0.96	3.23	20.83	21.74	23.84	26.39	●
9418/01.00/22-4	0.5	22	4	1	1.5	60	0.96	3.01	22.92	23.92	26.23	29.04	●
9418/01.20/06-4	0.6	6	4	1.2	1.6	45	1.15	6.64	6.23	6.48	7.06	7.77	●
9418/01.20/08-4	0.6	8	4	1.2	1.6	45	1.15	5.70	8.32	8.66	9.46	10.43	●
9418/01.20/10-4	0.6	10	4	1.2	1.6	45	1.15	5.00	10.40	10.84	11.85	13.08	●
9418/01.20/12-4	0.6	12	4	1.2	1.6	45	1.15	4.44	12.49	13.02	14.24	15.74	●
9418/01.20/16-4	0.6	16	4	1.2	1.6	50	1.15	3.64	16.66	17.38	19.03	21.04	●
9418/01.40/08-4	0.7	8	4	1.4	1.7	45	1.35	5.52	8.31	8.65	9.44	10.39	●
9418/01.40/12-4	0.7	12	4	1.4	1.7	45	1.35	4.26	12.48	13.01	14.22	15.70	●
9418/01.40/16-4	0.7	16	4	1.4	1.7	50	1.35	3.47	16.66	17.37	19.01	21.01	●
9418/01.50/08-4	0.75	8	4	1.5	1.8	45	1.45	5.42	8.31	8.65	9.43	10.38	●
9418/01.50/10-4	0.75	10	4	1.5	1.8	45	1.45	4.71	10.40	10.83	11.82	13.03	●
9418/01.50/12-4	0.75	12	4	1.5	1.8	45	1.45	4.17	12.48	13.01	14.21	15.69	●
9418/01.50/14-4	0.75	14	4	1.5	1.8	50	1.45	3.73	14.57	15.19	16.61	18.34	●
9418/01.50/16-4	0.75	16	4	1.5	1.8	50	1.45	3.38	16.65	17.36	19.00	21.00	●
9418/01.50/18-4	0.75	18	4	1.5	1.8	55	1.45	3.09	18.74	19.54	21.39	23.65	●
9418/01.50/20-4	0.75	20	4	1.5	1.8	55	1.45	2.85	20.82	21.72	23.79		●
9418/01.60/08-4	0.8	8	4	1.6	1.8	45	1.55	5.32	8.31	8.64	9.42	10.36	●
9418/01.60/12-4	0.8	12	4	1.6	1.8	45	1.55	4.07	12.48	13.00	14.20	15.67	●
9418/01.60/16-4	0.8	16	4	1.6	1.8	50	1.55	3.29	16.65	17.36	18.99	20.98	●
9418/01.60/20-4	0.8	20	4	1.6	1.8	55	1.55	2.76	20.82	21.72	23.78		●

Condizioni di taglio ► B-78

Disponibili fino ad esaurimento scorte.
Sostituite da ART. 9428

B-35

LIST 9418

Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9418/01.80/08-4	0.9	8	4	1.8	1.9	45	1.75	5.10	8.30	8.64	9.40	10.33	●
9418/01.80/12-4	0.9	12	4	1.8	1.9	45	1.75	3.86	12.48	12.99	14.19	15.64	●
9418/01.80/16-4	0.9	16	4	1.8	1.9	50	1.75	3.10	16.65	17.35	18.97	20.95	●
9418/01.80/20-4	0.9	20	4	1.8	1.9	55	1.75	2.59	20.82	21.71	23.76		●
9418/02.00/04-4	1	4	4	2	2	45	1.95	7.33	4.13	4.27	4.59	4.99	●
9418/02.00/06-4	1	6	4	2	2	45	1.95	5.85	6.21	6.45	6.99	7.64	●
9418/02.00/08-4	1	8	4	2	2	45	1.95	4.87	8.30	8.63	9.38	10.30	●
9418/02.00/10-4	1	10	4	2	2	45	1.95	4.16	10.39	10.81	11.77	12.95	●
9418/02.00/12-4	1	12	4	2	2	45	1.95	3.64	12.47	12.98	14.17	15.61	●
9418/02.00/14-4	1	14	4	2	2	50	1.95	3.23	14.56	15.16	16.56	18.26	●
9418/02.00/16-4	1	16	4	2	2	50	1.95	2.90	16.64	17.34	18.95		●
9418/02.00/18-4	1	18	4	2	2	55	1.95	2.64	18.73	19.52	21.35		●
9418/02.00/20-4	1	20	4	2	2	55	1.95	2.41	20.81	21.70	23.74		●
9418/02.00/22-4	1	22	4	2	2	60	1.95	2.23	22.90	23.88	26.13		●
9418/02.00/25-4	1	25	4	2	2	65	1.95	1.99	26.03	27.15			●
9418/02.00/30-4	1	30	4	2	2	70	1.95	1.70	31.24	32.60			●
9418/00.20/0.5-6	0.1	0.5	6	0.2	0.2	50	0.18	11.66	0.52	0.54	0.58	0.63	●
9418/00.20/01-6	0.1	1	6	0.2	0.2	50	0.18	11.27	1.04	1.08	1.18	1.30	●
9418/00.20/1.5-6	0.1	1.5	6	0.2	0.2	50	0.18	10.90	1.56	1.63	1.78	1.96	●
9418/00.20/02-6	0.1	2	6	0.2	0.2	50	0.18	10.56	2.08	2.17	2.37	2.62	●
9418/00.30/01-6	0.15	1	6	0.3	0.3	50	0.28	11.29	1.04	1.08	1.17	1.28	●
9418/00.30/1.5-6	0.15	1.5	6	0.3	0.3	50	0.28	10.92	1.56	1.62	1.77	1.94	●
9418/00.30/02-6	0.15	2	6	0.3	0.3	50	0.28	10.57	2.08	2.17	2.36	2.61	●
9418/00.40/01-6	0.2	1	6	0.4	0.4	50	0.37	11.32	1.03	1.07	1.16	1.26	●

Condizioni di taglio ► B-78



Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	Lunghezza effettiva di un angolo inclinato su parti				Stock
									0.5°	1°	2°	3°	
9418/00.40/1.5-6	0.2	1.5	6	0.4	0.4	50	0.37	10.94	1.56	1.62	1.76	1.93	●
9418/00.40/02-6	0.2	2	6	0.4	0.4	50	0.37	10.58	2.08	2.16	2.35	2.59	●
9418/00.40/2.5-6	0.2	2.5	6	0.4	0.4	50	0.37	10.25	2.60	2.71	2.95	3.25	●
9418/00.40/03-6	0.2	3	6	0.4	0.4	50	0.37	9.93	3.12	3.25	3.55	3.92	●
9418/00.50/1.5-6	0.25	1.5	6	0.5	0.5	50	0.47	10.95	1.55	1.61	1.75	1.91	●
9418/00.50/02-6	0.25	2	6	0.5	0.5	50	0.47	10.59	2.07	2.16	2.34	2.57	●
9418/00.50/03-6	0.25	3	6	0.5	0.5	50	0.47	9.93	3.12	3.25	3.54	3.90	●
9418/00.50/04-6	0.25	4	6	0.5	0.5	50	0.47	9.35	4.16	4.34	4.74	5.23	●
9418/00.50/05-6	0.25	5	6	0.5	0.5	50	0.47	8.83	5.20	5.43	5.93	6.56	●
9418/00.50/06-6	0.25	6	6	0.5	0.5	50	0.47	8.36	6.25	6.51	7.13	7.88	●
9418/00.50/08-6	0.25	8	6	0.5	0.5	50	0.47	7.57	8.33	8.69	9.52	10.54	●
9418/00.60/02-6	0.3	2	6	0.6	0.6	50	0.56	10.60	2.07	2.15	2.34	2.56	●
9418/00.60/03-6	0.3	3	6	0.6	0.6	50	0.56	9.93	3.12	3.24	3.53	3.89	●
9418/00.60/04-6	0.3	4	6	0.6	0.6	50	0.56	9.33	4.16	4.33	4.73	5.21	●
9418/00.60/06-6	0.3	5	6	0.6	0.6	50	0.56	8.81	5.20	5.42	5.92	6.54	●
9418/00.60/06-6	0.3	6	6	0.6	0.6	50	0.56	8.34	6.24	6.51	7.12	7.87	●
9418/00.60/08-6	0.3	8	6	0.6	0.6	50	0.56	7.53	8.33	8.69	9.51	10.52	●
9418/00.60/10-6	0.3	10	6	0.6	0.6	50	0.56	6.87	10.42	10.87	11.91	13.18	●
9418/00.80/02-6	0.4	2	6	0.8	1.4	50	0.76	10.62	2.07	2.14	2.32	2.53	●
9418/00.80/03-6	0.4	3	6	0.8	1.4	50	0.76	9.92	3.11	3.23	3.51	3.85	●
9418/00.80/04-6	0.4	4	6	0.8	1.4	50	0.76	9.31	4.15	4.32	4.71	5.18	●
9418/00.80/05-6	0.4	5	6	0.8	1.4	50	0.76	8.77	5.20	5.41	5.91	6.51	●
9418/00.80/06-6	0.4	6	6	0.8	1.4	50	0.76	8.28	6.24	6.50	7.10	7.84	●
9418/00.80/08-6	0.4	8	6	0.8	1.4	50	0.76	7.46	8.33	8.68	9.50	10.49	●

LIST 9418

Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9418/00.80/10-6	0.4	10	6	0.8	1.4	50	0.76	6.78	10.41	10.86	11.89	13.14	●
9418/01.00/03-6	0.5	3	6	1	1.5	50	0.96	9.91	3.11	3.22	3.49	3.82	●
9418/01.00/04-6	0.5	4	6	1	1.5	50	0.96	9.28	4.15	4.31	4.69	5.15	●
9418/01.00/05-6	0.5	5	6	1	1.5	50	0.96	8.72	5.19	5.40	5.89	6.48	●
9418/01.00/06-6	0.5	6	6	1	1.5	50	0.96	8.22	6.24	6.49	7.08	7.80	●
9418/01.00/08-6	0.5	8	6	1	1.5	50	0.96	7.38	8.32	8.67	9.48	10.46	●
9418/01.00/10-6	0.5	10	6	1	1.5	50	0.96	6.70	10.41	10.85	11.87	13.11	●
9418/01.00/12-6	0.5	12	6	1	1.5	50	0.96	6.13	12.49	13.03	14.26	15.77	●
9418/01.00/14-6	0.5	14	6	1	1.5	60	0.96	5.65	14.58	15.21	16.66	18.42	●
9418/01.00/16-6	0.5	16	6	1	1.5	60	0.96	5.24	16.66	17.39	19.05	21.08	●
9418/01.00/18-6	0.5	18	6	1	1.5	60	0.96	4.88	18.75	19.57	21.44	23.73	●
9418/01.00/20-6	0.5	20	6	1	1.5	60	0.96	4.57	20.83	21.74	23.84	26.39	●
9418/01.00/22-6	0.5	22	6	1	1.5	60	0.96	4.30	22.92	23.92	26.23	29.04	●
9418/01.20/06-6	0.6	6	6	1.2	1.6	50	1.15	8.16	6.23	6.48	7.06	7.77	●
9418/01.20/08-6	0.6	8	6	1.2	1.6	50	1.15	7.30	8.32	8.66	9.46	10.43	●
9418/01.20/10-6	0.6	10	6	1.2	1.6	50	1.15	6.61	10.40	10.84	11.85	13.08	●
9418/01.20/12-6	0.6	12	6	1.2	1.6	50	1.15	6.03	12.49	13.02	14.24	15.74	●
9418/01.20/16-6	0.6	16	6	1.2	1.6	60	1.15	5.13	16.66	17.38	19.03	21.04	●
9418/01.50/08-6	0.75	8	6	1.5	1.8	50	1.45	7.17	8.31	8.65	9.43	10.38	●
9418/01.50/10-6	0.75	10	6	1.5	1.8	50	1.45	6.46	10.40	10.83	11.82	13.03	●
9418/01.50/12-6	0.75	12	6	1.5	1.8	50	1.45	5.87	12.48	13.01	14.21	15.69	●
9418/01.50/16-6	0.75	16	6	1.5	1.8	60	1.45	4.97	16.65	17.36	19.00	21.00	●
9418/01.50/20-6	0.75	20	6	1.5	1.8	60	1.45	4.31	20.82	21.72	23.79	26.31	●
9418/02.00/04-6	1	4	6	2	2	50	1.95	9.10	4.13	4.27	4.59	4.99	●

Condizioni di taglio

► B-78



Gamma con diametro del gambo 6 mm

Unità : mm

Codice	R	L1	d	D	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9418/02.00/06-6	1	6	6	2	2	50	1.95	7.87	6.21	6.45	6.99	7.64	●
9418/02.00/08-6	1	8	6	2	2	50	1.95	6.92	8.30	8.63	9.38	10.30	●
9418/02.00/10-6	1	10	6	2	2	50	1.95	6.18	10.39	10.81	11.77	12.95	●
9418/02.00/12-6	1	12	6	2	2	50	1.95	5.58	12.47	12.98	14.17	15.61	●
9418/02.00/14-6	1	14	6	2	2	60	1.95	5.09	14.56	15.16	16.56	18.26	●
9418/02.00/16-6	1	16	6	2	2	60	1.95	4.68	16.64	17.34	18.95	20.92	●
9418/02.00/18-6	1	18	6	2	2	60	1.95	4.32	18.73	19.52	21.35	23.57	●
9418/02.00/20-6	1	20	6	2	2	60	1.95	4.02	20.81	21.70	23.74	26.23	●
9418/02.00/22-6	1	22	6	2	2	60	1.95	3.76	22.90	23.88	26.13	28.88	●
9418/02.00/25-6	1	25	6	2	2	65	1.95	3.42	26.03	27.15	29.72	32.86	●
9418/02.00/30-6	1	30	6	2	2	70	1.95	2.98	31.24	32.60	35.70		●
9418/02.00/35-6	1	35	6	2	2	80	1.95	2.64	36.46	38.04	41.69		●
9418/03.00/08-6	1.5	8	6	3	2.5	60	2.9	6.28	8.28	8.58	9.28	10.14	●
9418/03.00/10-6	1.5	10	6	3	2.5	60	2.9	5.48	10.36	10.76	11.68	12.79	●
9418/03.00/12-6	1.5	12	6	3	2.5	60	2.9	4.87	12.45	12.94	14.07	15.45	●
9418/03.00/16-6	1.5	16	6	3	2.5	60	2.9	3.97	16.62	17.30	18.86	20.76	●
9418/03.00/20-6	1.5	20	6	3	2.5	65	2.9	3.35	20.79	21.66	23.64	26.07	●
9418/03.00/25-6	1.5	25	6	3	2.5	65	2.9	2.81	26.01	27.10	29.62		●
9418/03.00/30-6	1.5	30	6	3	2.5	70	2.9	2.41	31.22	32.55	35.61		●
9418/03.00/35-6	1.5	35	6	3	2.5	80	2.9	2.12	36.43	38.00	41.59		●
9418/04.00/10-6	2	10	6	4	3	65	3.9	4.47	10.34	10.72	11.58	12.64	●
9418/04.00/12-6	2	12	6	4	3	65	3.9	3.87	12.43	12.90	13.97	15.29	●
9418/04.00/16-6	2	16	6	4	3	65	3.9	3.05	16.60	17.25	18.76	20.60	●
9418/04.00/20-6	2	20	6	4	3	65	3.9	2.52	20.77	21.61	23.55		●

LIST 9418

Gamma con diametro del gambo 4 mm

Unità : mm

Codice	R	L1	d	D	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
									0.5°	1°	2°	3°	
9418/04.00/25-6	2	25	6	4	3	70	3.9	2.06	25.99	27.06	29.53		●
9418/04.00/30-6	2	30	6	4	3	70	3.9	1.75	31.20	32.51			●
9418/04.00/35-6	2	35	6	4	3	80	3.9	1.52	36.41	37.95			●
9418/04.00/40-6	2	40	6	4	3	85	3.9	1.34	41.63	43.40			●
9418/04.00/45-6	2	45	6	4	3	90	3.9	1.20	46.84	48.85			●
9418/04.00/50-6	2	50	6	4	3	100	3.9	1.09	52.06	54.30			●
9418/05.00/20-6	2.5	20	6	5	3.5	70	4.9	1.44	20.75	21.57			●
9418/05.00/25-6	2.5	25	6	5	3.5	70	4.9	1.15	25.96	27.01			●
9418/05.00/30-6	2.5	30	6	5	3.5	80	4.9	0.96	31.18				●
9418/05.00/35-6	2.5	35	6	5	3.5	80	4.9	0.82	36.39				●
9418/06.00/30-6	3	30	6	6	6	80	5.75	—					●
9418/06.00/50-6	3	50	6	6	6	120	5.75	—					●

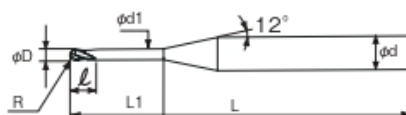
Tolleranza (mm)	
D	R
+0.006	+0.003
-0.014	-0.007

Tolleranza di diametro del gambo: 0/-0.005mm

Disponibili fino ad esaurimento scorte.
Sostituite da ART. 9428

Fresa GS collo lungo a due taglienti

- La scelta ottimale per lavorazioni di micro fresatura di acciai da stampi e matrici.
- È possibile soddisfare qualsiasi tipo di esigenze grazie alla gamma dimensionale disponibile.



Unità : mm

LIST 9414

Codice	D	L1	d	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
								0.5°	1°	2°	3°	
9414/00.20/0.5-4	0.2	0.5	4	0.3	45	0.18	11.38	0.52	0.54	0.60	0.66	●
9414/00.20/01-4	0.2	1	4	0.3	45	0.18	10.82	1.04	1.09	1.20	1.33	●
9414/00.20/1.5-4	0.2	1.5	4	0.3	45	0.18	10.32	1.56	1.63	1.79	1.99	●
9414/00.30/01-4	0.3	1	4	0.4	45	0.28	10.79	1.04	1.09	1.20	1.33	●
9414/00.30/02-4	0.3	2	4	0.4	45	0.28	9.81	2.09	2.18	2.39	2.65	●
9414/00.30/03-4	0.3	3	4	0.4	45	0.28	8.98	3.13	3.27	3.59	3.98	●
9414/00.30/06-4	0.3	6	4	0.4	45	0.28	7.17	6.26	6.54	7.18	7.96	●
9414/00.30/09-4	0.3	9	4	0.4	45	0.28	5.97	9.39	9.81	10.77	11.95	●
9414/00.40/02-4	0.4	2	4	0.6	45	0.37	9.76	2.09	2.18	2.39	2.65	●
9414/00.40/03-4	0.4	3	4	0.6	45	0.37	8.92	3.13	3.27	3.59	3.98	●
9414/00.40/04-4	0.4	4	4	0.6	45	0.37	8.21	4.17	4.36	4.79	5.31	●
9414/00.40/08-4	0.4	8	4	0.6	45	0.37	6.24	8.34	8.72	9.57	10.62	●
9414/00.40/12-4	0.4	12	4	0.6	45	0.37	5.03	12.51	13.07	14.36	15.93	●
9414/00.50/02-4	0.5	2	4	0.7	45	0.47	9.70	2.09	2.18	2.39	2.65	●
9414/00.50/04-4	0.5	4	4	0.7	45	0.47	8.14	4.17	4.36	4.79	5.31	●
9414/00.50/06-4	0.5	6	4	0.7	45	0.47	7.01	6.26	6.54	7.18	7.96	●
9414/00.50/08-4	0.5	8	4	0.7	50	0.47	6.15	8.34	8.72	9.57	10.62	●
9414/00.50/10-4	0.5	10	4	0.7	50	0.47	5.48	10.43	10.89	11.97	13.27	●
9414/00.50/15-4	0.5	15	4	0.7	50	0.47	4.31	15.64	16.34	17.95	19.91	●
9414/00.60/02-4	0.6	2	4	0.9	45	0.57	9.65	2.09	2.18	2.39	2.65	●
9414/00.60/04-4	0.6	4	4	0.9	45	0.57	8.06	4.17	4.36	4.79	5.31	●
9414/00.60/06-4	0.6	6	4	0.9	45	0.57	6.92	6.26	6.54	7.18	7.96	●
9414/00.60/08-4	0.6	8	4	0.9	50	0.57	6.07	8.34	8.72	9.57	10.62	●
9414/00.60/10-4	0.6	10	4	0.9	50	0.57	5.40	10.43	10.89	11.97	13.27	●
9414/00.60/12-4	0.6	12	4	0.9	50	0.57	4.86	12.51	13.07	14.36	15.93	●

Condizioni di taglio

► B-94

LIST 9414

Unità : mm

Codice	D	L1	d	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
								0.5°	1°	2°	3°	
9414/00.60/18-4	0.6	18	4	0.9	50	0.57	3.74	18.77	19.61	21.54	23.89	●
9414/00.70/02-4	0.7	2	4	1	45	0.67	9.59	2.09	2.18	2.39	2.65	●
9414/00.70/04-4	0.7	4	4	1	45	0.67	7.99	4.17	4.36	4.79	5.31	●
9414/00.70/06-4	0.7	6	4	1	45	0.67	6.84	6.26	6.54	7.18	7.96	●
9414/00.70/08-4	0.7	8	4	1	50	0.67	5.98	8.34	8.72	9.57	10.62	●
9414/00.70/10-4	0.7	10	4	1	50	0.67	5.31	10.43	10.89	11.97	13.27	●
9414/00.80/04-4	0.8	4	4	1.2	45	0.77	7.90	4.17	4.36	4.79	5.31	●
9414/00.80/06-4	0.8	6	4	1.2	45	0.77	6.75	6.26	6.54	7.18	7.96	●
9414/00.80/08-4	0.8	8	4	1.2	50	0.77	5.88	8.34	8.72	9.57	10.62	●
9414/00.80/10-4	0.8	10	4	1.2	50	0.77	5.22	10.43	10.89	11.97	13.27	●
9414/00.80/12-4	0.8	12	4	1.2	50	0.77	4.68	12.51	13.07	14.36	15.93	●
9414/00.80/16-4	0.8	16	4	1.2	50	0.77	3.89	16.69	17.43	19.15	21.24	●
9414/00.80/24-4	0.8	24	4	1.2	60	0.77	2.91	25.03	26.15	28.72		●
9414/00.90/06-4	0.9	6	4	1.4	45	0.87	6.65	6.26	6.54	7.18	7.96	●
9414/00.90/08-4	0.9	8	4	1.4	50	0.87	5.79	8.34	8.72	9.57	10.62	●
9414/00.90/10-4	0.9	10	4	1.4	50	0.87	5.12	10.43	10.89	11.97	13.27	●
9414/00.90/15-4	0.9	15	4	1.4	60	0.87	3.98	15.64	16.34	17.95	19.91	●
9414/01.00/04-4	1	4	4	1.5	50	0.97	7.73	4.17	4.36	4.79	5.31	●
9414/01.00/06-4	1	6	4	1.5	50	0.97	6.55	6.26	6.54	7.18	7.96	●
9414/01.00/08-4	1	8	4	1.5	50	0.97	5.69	8.34	8.72	9.57	10.62	●
9414/01.00/10-4	1	10	4	1.5	50	0.97	5.03	10.43	10.89	11.97	13.27	●
9414/01.00/12-4	1	12	4	1.5	50	0.97	4.50	12.51	13.07	14.36	15.93	●
9414/01.00/16-4	1	16	4	1.5	60	0.97	3.72	16.69	17.43	19.15	21.24	●
9414/01.00/20-4	1	20	4	1.5	60	0.97	3.17	20.86	21.79	23.93	26.54	●
9414/01.00/25-4	1	25	4	1.5	70	0.97	2.68	26.07	27.24	29.91		●



Unità : mm

Codice	D	L1	d	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
								0.5°	1°	2°	3°	
9414/01.00/30-4	1	30	4	1.5	70	0.97	2.32	31.28	32.68	35.90		●
9414/01.20/06-4	1.2	6	4	1.8	50	1.15	6.35	6.26	6.54	7.18	7.96	●
9414/01.20/08-4	1.2	8	4	1.8	50	1.15	5.48	8.34	8.72	9.57	10.62	●
9414/01.20/10-4	1.2	10	4	1.8	50	1.15	4.82	10.43	10.89	11.97	13.27	●
9414/01.20/12-4	1.2	12	4	1.8	50	1.15	4.31	12.51	13.07	14.36	15.93	●
9414/01.20/16-4	1.2	16	4	1.8	60	1.15	3.55	16.69	17.43	19.15	21.24	●
9414/01.20/20-4	1.2	20	4	1.8	60	1.15	3.01	20.86	21.79	23.93	26.54	●
9414/01.50/06-4	1.5	6	4	2.3	50	1.45	6.01	6.26	6.54	7.18	7.96	●
9414/01.50/08-4	1.5	8	4	2.3	50	1.45	5.15	8.34	8.72	9.57	10.62	●
9414/01.50/10-4	1.5	10	4	2.3	50	1.45	4.50	10.43	10.89	11.97	13.27	●
9414/01.50/12-4	1.5	12	4	2.3	50	1.45	4.00	12.51	13.07	14.36	15.93	●
9414/01.50/14-4	1.5	14	4	2.3	60	1.45	3.60	14.60	15.25	16.75	18.58	●
9414/01.50/16-4	1.5	16	4	2.3	60	1.45	3.27	16.69	17.43	19.15	21.24	●
9414/01.50/18-4	1.5	18	4	2.3	60	1.45	3.00	18.77	19.61	21.54	23.89	●
9414/01.50/20-4	1.5	20	4	2.3	60	1.45	2.77	20.86	21.79	23.93		●
9414/01.50/25-4	1.5	25	4	2.3	70	1.45	2.32	26.07	27.24	29.91		●
9414/00.50/30-4	1.5	30	4	2.3	70	1.45	2.00	31.28	32.68	35.90		●
9414/01.50/38-4	1.5	38	4	2.3	80	1.45	1.63	39.63	41.40			●
9414/01.50/45-4	1.5	45	4	2.3	80	1.45	1.41	46.93	49.03			●
9414/02.00/06-4	2	6	4	3	50	1.95	5.34	6.26	6.54	7.18	7.96	●
9414/02.00/08-4	2	8	4	3	50	1.95	4.50	8.34	8.72	9.57	10.62	●
9414/02.00/10-4	2	10	4	3	50	1.95	3.89	10.43	10.89	11.97	13.27	●
9414/02.00/12-4	2	12	4	3	50	1.95	3.43	12.51	13.07	14.36	15.93	●
9414/02.00/14-4	2	14	4	3	60	1.95	3.06	14.60	15.25	16.75	18.58	●
9414/02.00/16-4	2	16	4	3	60	1.95	2.77	16.69	17.43	19.15		●

LIST 9414

Unità : mm

Codice	D	L1	d	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
								0.5°	1°	2°	3°	
9414/02.00/18-4	2	18	4	3	60	1.95	2.52	18.77	19.61	21.54		●
9414/02.00/20-4	2	20	4	3	60	1.95	2.32	20.86	21.79	23.93		●
9414/02.00/25-4	2	25	4	3	70	1.95	1.93	26.07	27.24			●
9414/02.00/30-4	2	30	4	3	70	1.95	1.65	31.28	32.68			●
9414/02.00/35-4	2	35	4	3	80	1.95	1.44	36.50	38.13			●
9414/02.00/40-4	2	40	4	3	90	1.95	1.28	41.71	43.58			●
9414/02.00/50-4	2	50	4	3	100	1.95	1.05	52.14	54.47			●
9414/02.00/60-4	2	60	4	3	110	1.95	0.89	62.57				●
9414/02.50/08-4	2.5	8	4	3.7	50	2.45	3.72	8.34	8.72	9.57	10.62	●
9414/02.50/12-4	2.5	12	4	3.7	50	2.45	2.77	12.51	13.07	14.36		●
9414/02.50/16-4	2.5	16	4	3.7	60	2.45	2.20	16.69	17.43	19.15		●
9414/02.50/20-4	2.5	20	4	3.7	60	2.45	1.83	20.86	21.79			●
9414/02.50/25-4	2.5	25	4	3.7	70	2.45	1.51	26.07	27.24			●
9414/02.50/30-4	2.5	30	4	3.7	70	2.45	1.28	31.28	32.68			●
9414/02.50/40-4	2.5	40	4	3.7	90	2.45	0.99	41.71				●
9414/02.50/50-4	2.5	50	4	3.7	100	2.45	0.80	52.14				●
9414/03.00/08-6	3	8	6	4.5	50	2.9	5.69	8.34	8.72	9.57	10.62	●
9414/03.00/12-6	3	12	6	4.5	50	2.9	4.50	12.51	13.07	14.36	15.93	●
9414/03.00/16-6	3	16	6	4.5	60	2.9	3.72	16.69	17.43	19.15	21.24	●
9414/03.00/20-6	3	20	6	4.5	60	2.9	3.17	20.86	21.79	23.93	26.54	●
9414/03.00/25-6	3	25	6	4.5	70	2.9	2.68	26.07	27.24	29.91		●
9414/03.00/30-6	3	30	6	4.5	70	2.9	2.32	31.28	32.68	35.90		●
9414/03.00/40-6	3	40	6	4.5	90	2.9	1.83	41.71	43.58			●
9414/03.00/50-6	3	50	6	4.5	100	2.9	1.51	52.14	54.47			●
9414/04.00/12-6	4	12	6	6	50	3.9	3.43	12.51	13.07	14.36	15.93	●



Unità : mm

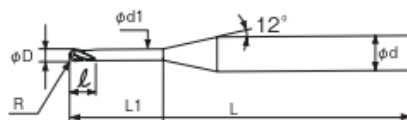
Codice	D	L1	d	<i>ℓ</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
								0.5°	1°	2°	3°	
9414/04.00/16-6	4	16	6	6	60	3.9	2.77	16.69	17.43	19.15		●
9414/04.00/20-6	4	20	6	6	60	3.9	2.32	20.86	21.79	23.93		●
9414/04.00/25-6	4	25	6	6	70	3.9	1.93	26.07	27.24			●
9414/04.00/30-6	4	30	6	6	70	3.9	1.65	31.28	32.68			●
9414/04.00/35-6	4	35	6	6	80	3.9	1.44	36.50	38.13			●
9414/04.00/40-6	4	40	6	6	90	3.9	1.28	41.71	43.58			●
9414/04.00/45-6	4	45	6	6	90	3.9	1.15	46.93	49.03			●
9414/04.00/50-6	4	50	6	6	100	3.9	1.05	52.14	54.47			●
9414/04.00/60-6	4	60	6	6	110	3.9	0.89	62.57				●
9414/05.00/16-6	5	16	6	7.5	60	4.9	1.56	16.69	17.43			●
9414/05.00/25-6	5	25	6	7.5	70	4.9	1.05	26.07	27.24			●
9414/05.00/35-6	5	35	6	7.5	80	4.9	0.77	36.50				●
9414/05.00/50-6	5	50	6	7.5	110	4.9	0.55	52.14				●
9414/05.00/60-6	5	60	6	7.5	120	4.9	0.46	62.57				●
9414/06.00/20-6	6	20	6	9	80	5.9	–					●
9414/06.00/30-6	6	30	6	9	90	5.9	–					●
9414/06.00/40-6	6	40	6	9	100	5.9	–					●
9414/06.00/50-6	6	50	6	9	110	5.9	–					●
9414/06.00/60-6	6	60	6	9	120	5.9	–					●

D (mm)		Tolleranza (mm)
Da	a	
	0.4	0/–0.01
0.4	2.9	0/–0.015
2.9		0/–0.02

Tolleranza del diametro del gambo: 0/–0.005mm

Fresa GS collo lungo a quattro taglienti

- La scelta ottimale per lavorazioni di micro fresatura di acciai da stampi e matrici.
- È possibile soddisfare qualsiasi tipo di esigenze grazie alla gamma dimensionale disponibile.



Unità : mm

LIST 9416

Codice	D	L1	d	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
								0.5°	1°	2°	3°	
9416/01.00/04-4	1	4	4	1.5	50	0.97	7.73	4.17	4.36	4.79	5.31	●
9416/01.00/06-4	1	6	4	1.5	50	0.97	6.55	6.26	6.54	7.18	7.96	●
9416/01.00/08-4	1	8	4	1.5	50	0.97	5.69	8.34	8.72	9.57	10.62	●
9416/01.00/10-4	1	10	4	1.5	50	0.97	5.03	10.43	10.89	11.97	13.27	●
9416/01.00/12-4	1	12	4	1.5	50	0.97	4.50	12.51	13.07	14.36	15.93	●
9416/01.00/16-4	1	16	4	1.5	60	0.97	3.72	16.69	17.43	19.15	21.24	●
9416/01.20/06-4	1.2	6	4	1.8	50	1.15	6.35	6.26	6.54	7.18	7.96	●
9416/01.20/08-4	1.2	8	4	1.8	50	1.15	5.48	8.34	8.72	9.57	10.62	●
9416/01.20/10-4	1.2	10	4	1.8	50	1.15	4.82	10.43	10.89	11.97	13.27	●
9416/01.20/12-4	1.2	12	4	1.8	50	1.15	4.31	12.51	13.07	14.36	15.93	●
9416/01.20/16-4	1.2	16	4	1.8	60	1.15	3.55	16.69	17.43	19.15	21.24	●
9416/01.50/06-4	1.5	6	4	2.3	50	1.45	6.01	6.26	6.54	7.18	7.96	●
9416/01.50/08-4	1.5	8	4	2.3	50	1.45	5.15	8.34	8.72	9.57	10.62	●
9416/01.50/10-4	1.5	10	4	2.3	50	1.45	4.50	10.43	10.89	11.97	13.27	●
9416/01.50/12-4	1.5	12	4	2.3	50	1.45	4.00	12.51	13.07	14.36	15.93	●
9416/01.50/14-4	1.5	14	4	2.3	60	1.45	3.60	14.60	15.25	16.75	18.58	●
9416/01.50/16-4	1.5	16	4	2.3	60	1.45	3.27	16.69	17.43	19.15	21.24	●
9416/01.50/18-4	1.5	18	4	2.3	60	1.45	3.00	18.77	19.61	21.54	23.89	●
9416/01.50/20-4	1.5	20	4	2.3	60	1.45	2.77	20.86	21.79	23.93		●
9416/02.00/06-4	2	6	4	3	50	1.95	5.34	6.26	6.54	7.18	7.96	●
9416/02.00/08-4	2	8	4	3	50	1.95	4.50	8.34	8.72	9.57	10.62	●
9416/02.00/10-4	2	10	4	3	50	1.95	3.89	10.43	10.89	11.97	13.27	●
9416/02.00/12-4	2	12	4	3	50	1.95	3.43	12.51	13.07	14.36	15.93	●
9416/02.00/14-4	2	14	4	3	60	1.95	3.06	14.60	15.25	16.75	18.58	●
9416/02.00/16-4	2	16	4	3	60	1.95	2.77	16.69	17.43	19.15		●

Condizioni di taglio

► B-100



Unità : mm

Codice	D	L1	d	ℓ	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su part.				Stock
								0.5°	1°	2°	3°	
9416/02.00/18-4	2	18	4	3	60	1.95	2.52	18.77	19.61	21.54		●
9416/02.00/20-4	2	20	4	3	60	1.95	2.32	20.86	21.79	23.93		●
9416/02.00/25-4	2	25	4	3	70	1.95	1.93	26.07	27.24			●
9416/02.00/30-4	2	30	4	3	70	1.95	1.65	31.28	32.68			●
9416/02.50/08-4	2.5	8	4	3.7	50	2.45	3.72	8.34	8.72	9.57	10.62	●
9416/02.50/12-4	2.5	12	4	3.7	50	2.45	2.77	12.51	13.07	14.36		●
9416/02.50/16-4	2.5	16	4	3.7	60	2.45	2.20	16.69	17.43	19.15		●
9416/02.50/20-4	2.5	20	4	3.7	60	2.45	1.83	20.86	21.79			●
9416/02.50/25-4	2.5	25	4	3.7	70	2.45	1.51	26.07	27.24			●
9416/03.00/08-6	3	8	6	4.5	50	2.9	5.69	8.34	8.72	9.57	10.62	●
9416/03.00/12-6	3	12	6	4.5	50	2.9	4.50	12.51	13.07	14.36	15.93	●
9416/03.00/16-6	3	16	6	4.5	60	2.9	3.72	16.69	17.43	19.15	21.24	●
9416/03.00/20-6	3	20	6	4.5	60	2.9	3.17	20.86	21.79	23.93	26.54	●
9416/03.00/25-6	3	25	6	4.5	70	2.9	2.68	26.07	27.24	29.91		●
9416/03.00/30-6	3	30	6	4.5	70	2.9	2.32	31.28	32.68	35.90		●
9416/04.00/12-6	4	12	6	6	50	3.9	3.43	12.51	13.07	14.36		●
9416/04.00/16-6	4	16	6	6	60	3.9	2.77	16.69	17.43	19.15		●
9416/04.00/20-6	4	20	6	6	60	3.9	2.32	20.86	21.79	23.93		●
9416/04.00/25-6	4	25	6	6	70	3.9	1.93	26.07	27.24			●
9416/04.00/30-6	4	30	6	6	70	3.9	1.65	31.28	32.68			●
9416/04.00/35-6	4	35	6	6	80	3.9	1.44	36.50	38.13			●
9416/04.00/40-6	4	40	6	6	90	3.9	1.28	41.71	43.58			●
9416/04.00/45-6	4	45	6	6	90	3.9	1.15	46.93	49.03			●
9416/04.00/50-6	4	50	6	6	100	3.9	1.05	52.14	54.47			●
9416/05.00/16-6	5	16	6	7.5	60	4.9	1.56	16.69	17.43			●

LIST 9416

Unità : mm

Codice	D	L1	d	<i>l</i>	L	d1	Angolo di interferenza	lunghezza effettiva di un angolo inclinato su parti				Stock
								0.5°	1°	2°	3°	
9416/05.00/25-6	5	25	6	7.5	70	4.9	1.05	26.07	27.24			●
9416/05.00/35-6	5	35	6	7.5	80	4.9	0.77	36.50				●
9416/05.00/50-6	5	50	6	7.5	110	4.9	0.55	52.14				●
9416/06.00/20-6	6	20	6	9	80	5.9	–					●
9416/06.00/30-6	6	30	6	9	90	5.9	–					●
9416/06.00/40-6	6	40	6	9	100	5.9	–					●
9416/06.00/50-6	6	50	6	9	110	5.9	–					●
9416/08.00/30-8	8	30	8	12	100	7.8	–					●
9416/08.00/50-8	8	50	8	12	120	7.8	–					●
9416/08.00/60-8	8	60	8	12	130	7.8	–					●
9416/10.00/40-10	10	40	10	15	110	9.8	–					●
9416/10.00/60-10	10	60	10	15	130	9.8	–					●
9416/10.00/80-10	10	80	10	15	150	9.8	–					●