



Размер D 0,2-6

HLRS • HLRS-E



22 новых моделей

Обрабатываемый материал (наиболее подходящий, подходящий)

Материал									Рекомендуемое охлаждение — Подходящее охлаждение	
Углеродистые стали S45C S55C	Легированные стали SK-SCM SUS	Упрочненные стали NAK HPM	Закаленные стали			Чугун	Алюминиевые сплавы	Графит		Медь
			(~55HRC)	(~60HRC)	(~65HRC)					
									*1	

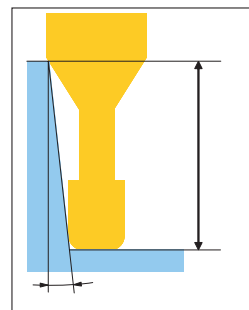
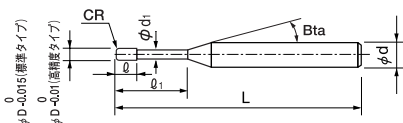
Воздушное /масленный туман
— Водная эмульсия /масло

*1 Рекомендуется масло или водная эмульсия для фрезерования Меди

Общее количество моделей 245

Ед.изм. (мм)

Модель	Рабочий диаметр	Радиус угла	Длина рабочей части	Длина режущей части	Диаметр шейки	Угол конуса	Общая длина	Диаметр хвостов.	Цена
	D	CR	ℓ ₁	ℓ	φ d ₁	β/α	L	d	
HLRS 2002-005-005 E	0.2	R0.05	0.5	0.2	0.17	16°	50	4	
HLRS 2002-005-010 E			1				50	4	
HLRS 2003-005-010 E	0.3	R0.05	1	0.3	0.27	16°	50	4	
HLRS 2003-005-020 E			2				50	4	
HLRS 2004-005-010 E	0.4	R0.05	1	0.4	0.38	16°	50	4	
HLRS 2004-005-015 E			1.5				50	4	
HLRS 2004-005-020 E			2				50	4	
HLRS 2004-005-030 E			3				50	4	
HLRS 2004-005-040 E			4				50	4	
HLRS 2004-01-010			1				50	4	
HLRS 2004-01-015		1.5	50				4		
HLRS 2004-01-020		R0.1	2				50	4	
HLRS 2004-01-030			3				50	4	
HLRS 2004-01-040			4				50	4	
HLRS 2005-01-010	0.5		R0.1	1	0.5	0.48	16°	50	4
HLRS 2005-01-020		2		50				4	
HLRS 2005-01-030		3		50				4	
HLRS 2005-01-040		4		50				4	
HLRS 2005-01-050		5		50				4	
HLRS 2005-01-060		6		50				4	
HLRS 2006-01-020	0.6	R0.1	2	0.6	0.58	16°	50	4	
HLRS 2006-01-020 E			2				50	4	
HLRS 2006-01-030			3				50	4	
HLRS 2006-01-030 E			3				50	4	
HLRS 2006-01-040			4				50	4	
HLRS 2006-01-040 E			4				50	4	
HLRS 2006-01-060			6				50	4	
HLRS 2006-01-080			8				50	4	



	0/-0.015	± 0.005 ± 0.005
	0/-0.01	± 0.005 ± 0.005

Модель	Рабочий диаметр D	Радиус угла CR	Длина раб. части ℓ_1	Длина раб. части при различных углах наклона				
				30'	1°	1°30'	2°	3°
HLRS 2002-005-005 E	0.2	R0.05	0.5	0.65	0.81	0.93	1.04	1.25
HLRS 2002-005-010 E			1	1.25	1.43	1.58	1.71	1.94
HLRS 2003-005-010 E	0.3	R0.05	1	1.25	1.43	1.58	1.71	1.94
HLRS 2003-005-020 E			2	2.38	2.61	2.79	2.95	3.22
HLRS 2004-005-010 E	0.4	R0.05	1	1.25	1.43	1.58	1.71	1.94
HLRS 2004-005-015 E			1.5	1.82	2.03	2.19	2.34	2.59
HLRS 2004-005-020 E			2	2.38	2.61	2.79	2.95	3.22
HLRS 2004-005-030 E			3	3.48	3.74	3.95	4.13	4.30
HLRS 2004-005-040 E			4	4.56	4.85	5.08	5.28	5.67
HLRS 2004-01-010			R0.1	1	1.24	1.42	1.57	1.69
HLRS 2004-01-015		1.5		1.81	2.02	2.18	2.32	2.57
HLRS 2004-01-020		2		2.37	2.60	2.78	2.93	3.20
HLRS 2004-01-030		3		3.47	3.73	3.94	4.11	4.28
HLRS 2004-01-040		4	4.55	4.84	5.07	5.26	5.65	
HLRS 2005-01-010	0.5	R0.1	1	1.24	1.42	1.57	1.69	1.92
HLRS 2005-01-020			2	2.37	2.60	2.78	2.93	3.20
HLRS 2005-01-030			3	3.47	3.73	3.94	4.11	4.28
HLRS 2005-01-040			4	4.55	4.84	5.07	5.26	5.65
HLRS 2005-01-050			5	5.62	5.94	6.19	6.40	6.88
HLRS 2005-01-060			6	6.68	7.03	7.30	7.54	8.10
HLRS 2006-01-020	0.6	R0.1	2	2.37	2.60	2.78	2.93	3.20
HLRS 2006-01-020 E				2.37	2.60	2.78	2.93	3.20
HLRS 2006-01-030			3	3.47	3.73	3.94	4.11	4.28
HLRS 2006-01-030 E				3.47	3.73	3.94	4.11	4.28
HLRS 2006-01-040			4	4.55	4.84	5.07	5.26	5.65
HLRS 2006-01-040 E				4.55	4.84	5.07	5.26	5.65
HLRS 2006-01-060			6	6.68	7.03	7.30	7.54	8.10
HLRS 2006-01-080			8	8.79	9.18	9.50	9.82	10.55

Обозначение новой модели

Модель	Рабочий диаметр D	Радиус угла CR	Длина рабочей части l_1	Длина режущей части l	Диаметр шейки ϕd_1	Угол конуса Beta	Общая длина L	Диаметр хвостов. d	Цена	
HLRS 2007-01-040	0.7	R0.1	4	0.7	0.68	16 °	50	4		
HLRS 2007-01-060			6				50	4		
HLRS 2008-01-040	0.8	R0.1	4	0.8	0.78	16 °	50	4		
HLRS 2008-01-060			6				50	4		
HLRS 2008-02-040		R0.2	4				50	4		
HLRS 2008-02-060			6				50	4		
HLRS 2010-01-020	1	R0.1	2	1	0.95	16 °	50	4		
HLRS 2010-01-020 E			50				4			
HLRS 2010-01-040			4				50	4		
HLRS 2010-01-040 E			50				4			
HLRS 2010-01-060			6				50	4		
HLRS 2010-01-060 E			50				4			
HLRS 2010-01-080			8				50	4		
HLRS 2010-01-100			10				50	4		
HLRS 2010-01-120			12				55	4		
HLRS 2010-01-160			16				60	4		
HLRS 2010-01-200			20				60	4		
HLRS 2010-02-020			R0.2				2	50	4	
HLRS 2010-02-020 E							50	4		
HLRS 2010-02-040							4	50	4	
HLRS 2010-02-040 E							50	4		
HLRS 2010-02-060							6	50	4	
HLRS 2010-02-060 E		50					4			
HLRS 2010-02-080		8					50	4		
HLRS 2010-02-100		10					50	4		
HLRS 2010-02-120		12					55	4		
HLRS 2010-02-160		16					60	4		
HLRS 2010-02-200		20					60	4		
HLRS 2010-03-020		R0.3					2	50	4	
HLRS 2010-03-020 E							50	4		
HLRS 2010-03-040							4	50	4	
HLRS 2010-03-040 E							50	4		
HLRS 2010-03-060							6	50	4	
HLRS 2010-03-060 E			50				4			
HLRS 2010-03-080			8				50	4		
HLRS 2010-03-100			10				50	4		
HLRS 2010-03-120			12				55	4		
HLRS 2010-03-160			16				60	4		
HLRS 2010-03-200	20		60	4						
HLRS 2012-02-060	1.2		R0.2	6	1.2	1.14	16 °	50	4	
HLRS 2012-02-120				12				55	4	
HLRS 2012-02-200				20				60	4	
HLRS 2012-03-060			R0.3	6				50	4	
HLRS 2012-03-120				12				55	4	
HLRS 2012-03-200		20		60				4		



Модель	Рабочий диаметр D	Радиус угла CR	Длина раб. части l_1	Длина раб. части при различных углах наклона					
				30'	1°	1°30'	2°	3°	
HLRS 2007-01-040	0.7	R0.1	4	4.55	4.84	5.07	5.26	5.65	
HLRS 2007-01-060			6	6.68	7.03	7.30	7.54	8.10	
HLRS 2008-01-040	0.8	R0.1	4	4.55	4.84	5.07	5.26	5.65	
HLRS 2008-01-060			6	6.68	7.03	7.30	7.54	8.10	
HLRS 2008-02-040		R0.2	4	4.53	4.82	5.05	5.23	5.61	
HLRS 2008-02-060			6	6.66	7.01	7.28	7.51	8.06	
HLRS 2010-01-020	1	R0.1	2	2.53	2.71	2.88	3.01	3.27	
HLRS 2010-01-020 E				2.53	2.71	2.88	3.01	3.27	
HLRS 2010-01-040			4	4.67	4.93	5.14	5.33	5.72	
HLRS 2010-01-040 E				4.67	4.93	5.14	5.33	5.72	
HLRS 2010-01-060			6	6.78	7.10	7.36	7.60	8.17	
HLRS 2010-01-060 E				6.78	7.10	7.36	7.60	8.17	
HLRS 2010-01-080			8	8.88	9.24	9.56	9.88	10.61	
HLRS 2010-01-100			10	10.97	11.37	11.76	12.16	13.06	
HLRS 2010-01-120			12	13.05	13.50	13.96	14.44	15.51	
HLRS 2010-01-160			16	17.20	17.76	18.36	18.99	20.40	
HLRS 2010-01-200			20	21.33	22.02	22.76	23.54	25.30	
HLRS 2010-02-020			R0.2	2	2.51	2.69	2.86	2.98	3.23
HLRS 2010-02-020 E					2.51	2.69	2.86	2.98	3.23
HLRS 2010-02-040				4	4.65	4.91	5.12	5.30	5.68
HLRS 2010-02-040 E		4.65			4.91	5.12	5.30	5.68	
HLRS 2010-02-060		6		6.76	7.08	7.34	7.57	8.13	
HLRS 2010-02-060 E				6.76	7.08	7.34	7.57	8.13	
HLRS 2010-02-080		8		8.86	9.22	9.54	9.85	10.57	
HLRS 2010-02-100		10		10.95	11.35	11.74	12.13	13.02	
HLRS 2010-02-120		12		13.03	13.48	13.94	14.41	15.47	
HLRS 2010-02-160		16		17.18	17.74	18.34	18.96	20.36	
HLRS 2010-02-200		20		21.31	22.00	22.74	23.51	25.26	
HLRS 2010-03-020		R0.3		2	2.49	2.67	2.84	2.95	3.19
HLRS 2010-03-020 E					2.49	2.67	2.84	2.95	3.19
HLRS 2010-03-040				4	4.63	4.89	5.10	5.27	5.64
HLRS 2010-03-040 E			4.63		4.89	5.10	5.27	5.64	
HLRS 2010-03-060			6	6.74	7.06	7.32	7.54	8.09	
HLRS 2010-03-060 E				6.74	7.06	7.32	7.54	8.09	
HLRS 2010-03-080			8	8.84	9.20	9.52	9.82	10.53	
HLRS 2010-03-100			10	10.93	11.33	11.72	12.10	12.98	
HLRS 2010-03-120			12	13.01	13.46	13.92	14.38	15.43	
HLRS 2010-03-160			16	17.16	17.72	18.32	18.93	20.32	
HLRS 2010-03-200			20	21.29	21.98	22.72	23.48	25.22	
HLRS 2012-02-060			1.2	R0.2	6	6.18	6.38	6.59	6.82
HLRS 2012-02-120	12				12.37	12.77	13.19	13.65	14.67
HLRS 2012-02-200	20				20.62	21.29	22.00	22.76	24.46
HLRS 2012-03-060	R0.3	6		6.18	6.38	6.59	6.81	7.31	
HLRS 2012-03-120		12		12.37	12.77	13.19	13.64	14.66	
HLRS 2012-03-200		20		20.62	21.28	21.99	22.75	24.45	

Модель	Рабочий диаметр	Радиус угла	Длина рабочей части	Длина режущей части	Диаметр шейки	Угол конуса	Общая длина	Диаметр хвостов.	Цена
	D	CR	ℓ_1	ℓ	ϕ_{d1}	$\beta_{та}$	L	d	
HLRS 2015-02-040	1.5	R0.2	4	1.5	1.45	16°	50	4	
HLRS 2015-02-060			6				50	4	
HLRS 2015-02-080			8				50	4	
HLRS 2015-02-100			10				50	4	
HLRS 2015-02-120			12				55	4	
HLRS 2015-02-160			16				55	4	
HLRS 2015-02-200			20				60	4	
HLRS 2015-03-040		R0.3	4				50	4	
HLRS 2015-03-060			6				50	4	
HLRS 2015-03-080			8				50	4	
HLRS 2015-03-100			10				50	4	
HLRS 2015-03-120			12				55	4	
HLRS 2015-03-160			16				55	4	
HLRS 2015-03-200			20				60	4	
HLRS 2015-05-040		R0.5	4				50	4	
HLRS 2015-05-060			6				50	4	
HLRS 2015-05-080			8				50	4	
HLRS 2015-05-100			10				50	4	
HLRS 2015-05-120			12				55	4	
HLRS 2015-05-160			16				55	4	
HLRS 2015-05-200	20		60	4					
HLRS 2020-01-040	2	R0.1	4	2	1.92	16°	50	4	
HLRS 2020-01-040 E			50				4		
HLRS 2020-01-060			6				50	4	
HLRS 2020-01-060 E			50				4		
HLRS 2020-01-080			8				50	4	
HLRS 2020-01-080 E			50				4		
HLRS 2020-01-100			10				50	4	
HLRS 2020-01-100 E			50				4		
HLRS 2020-01-120			12				55	4	
HLRS 2020-01-120 E			55				4		
HLRS 2020-01-160			16				60	4	
HLRS 2020-01-200			20				60	4	
HLRS 2020-01-260			26				70	4	
HLRS 2020-02-040		R0.2	4				50	4	
HLRS 2020-02-040 E			50				4		
HLRS 2020-02-060			6				50	4	
HLRS 2020-02-060 E			50				4		
HLRS 2020-02-080			8				50	4	
HLRS 2020-02-080 E			50				4		
HLRS 2020-02-100			10				50	4	
HLRS 2020-02-100 E			50				4		
HLRS 2020-02-120			12				55	4	
HLRS 2020-02-120 E			55				4		
HLRS 2020-02-160			16				60	4	
HLRS 2020-02-200			20				60	4	
HLRS 2020-02-260			26				70	4	



Модель	Рабочий диаметр D	Радиус угла CR	Длина раб. части l_1	Длина раб. части при различных углах наклона				
				30°	1°	1°30'	2°	3°
HLRS 2015-02-040	1.5	R0.2	4	4.12	4.25	4.39	4.54	4.88
HLRS 2015-02-060			6	6.18	6.38	6.59	6.82	7.33
HLRS 2015-02-080			8	8.24	8.51	8.79	9.10	9.77
HLRS 2015-02-100			10	10.31	10.64	10.99	11.37	12.22
HLRS 2015-02-120			12	12.37	12.77	13.19	13.65	14.67
HLRS 2015-02-160			16	16.49	17.03	17.60	18.21	19.56
HLRS 2015-02-200			20	20.62	21.29	22.00	22.76	
HLRS 2015-03-040		R0.3	4	4.12	4.25	4.39	4.54	4.87
HLRS 2015-03-060			6	6.18	6.38	6.59	6.81	7.31
HLRS 2015-03-080			8	8.24	8.51	8.79	9.09	9.76
HLRS 2015-03-100			10	10.30	10.64	10.99	11.37	12.21
HLRS 2015-03-120			12	12.37	12.77	13.19	13.64	14.66
HLRS 2015-03-160			16	16.49	17.02	17.59	18.20	19.55
HLRS 2015-03-200			20	20.62	21.28	21.99	22.75	
HLRS 2015-05-040		R0.5	4	4.11	4.24	4.38	4.52	4.85
HLRS 2015-05-060			6	6.18	6.37	6.58	6.80	7.29
HLRS 2015-05-080			8	8.24	8.50	8.78	9.08	9.74
HLRS 2015-05-100			10	10.30	10.63	10.98	11.35	12.19
HLRS 2015-05-120			12	12.36	12.76	13.18	13.63	14.64
HLRS 2015-05-160			16	16.49	17.02	17.58	18.19	19.53
HLRS 2015-05-200	20		20.62	21.28	21.98	22.74	24.42	
HLRS 2020-01-040	2	R0.1	4	4.16	4.29	4.43	4.59	4.93
HLRS 2020-01-040 E				4.16	4.29	4.43	4.59	4.93
HLRS 2020-01-060			6	6.22	6.42	6.64	6.87	7.38
HLRS 2020-01-060 E				6.22	6.42	6.64	6.87	7.38
HLRS 2020-01-080			8	8.28	8.55	8.84	9.14	9.83
HLRS 2020-01-080 E				8.28	8.55	8.84	9.14	9.83
HLRS 2020-01-100			10	10.34	10.68	11.04	11.42	12.27
HLRS 2020-01-100 E				10.34	10.68	11.04	11.42	12.27
HLRS 2020-01-120			12	12.41	12.81	13.24	13.70	14.72
HLRS 2020-01-120 E				12.41	12.81	13.24	13.70	14.72
HLRS 2020-01-160		16	16.53	17.07	17.64	18.25		
HLRS 2020-01-200		20	20.66	21.33	22.04	22.81		
HLRS 2020-01-260		26	26.85	27.72	28.65			
HLRS 2020-02-040		R0.2	4	4.15	4.29	4.43	4.58	4.92
HLRS 2020-02-040 E				4.15	4.29	4.43	4.58	4.92
HLRS 2020-02-060			6	6.22	6.42	6.63	6.86	7.37
HLRS 2020-02-060 E				6.22	6.42	6.63	6.86	7.37
HLRS 2020-02-080			8	8.28	8.55	8.83	9.14	9.82
HLRS 2020-02-080 E				8.28	8.55	8.83	9.14	9.82
HLRS 2020-02-100			10	10.34	10.68	11.03	11.41	12.26
HLRS 2020-02-100 E				10.34	10.68	11.03	11.41	12.26
HLRS 2020-02-120			12	12.40	12.81	13.23	13.69	14.71
HLRS 2020-02-120 E				12.40	12.81	13.23	13.69	14.71
HLRS 2020-02-160			16	16.53	17.06	17.64	18.25	
HLRS 2020-02-200			20	20.66	21.32	22.04	22.80	
HLRS 2020-02-260			26	26.84	27.71	28.64		



Модель	Рабочий диаметр D	Радиус угла CR	Длина рабочей части l_1	Длина режущей части l	Диаметр шейки ϕd_1	Угол конуса $\beta_{та}$	Общая длина L	Диаметр хвостов. d	Цена	
HLRS 2020-03-040	2	R0.3	4	2	1.92	16 °	50	4		
HLRS 2020-03-040 E							50	4		
HLRS 2020-03-060			6				50	4		
HLRS 2020-03-060 E							50	4		
HLRS 2020-03-080			8				50	4		
HLRS 2020-03-080 E							50	4		
HLRS 2020-03-100			10				50	4		
HLRS 2020-03-100 E							50	4		
HLRS 2020-03-120			12				55	4		
HLRS 2020-03-120 E							55	4		
HLRS 2020-03-160			16				60	4		
HLRS 2020-03-200							20	60	4	
HLRS 2020-03-260			26					70	4	
HLRS 2020-05-040							R0.5	4	50	4
HLRS 2020-05-040 E		50	4							
HLRS 2020-05-060		6	50					4		
HLRS 2020-05-060 E			50					4		
HLRS 2020-05-080		8	50					4		
HLRS 2020-05-080 E			50					4		
HLRS 2020-05-100		10	50					4		
HLRS 2020-05-100 E			50					4		
HLRS 2020-05-120		12	55					4		
HLRS 2020-05-120 E			55					4		
HLRS 2020-05-160		16	60					4		
HLRS 2020-05-200			20					60	4	
HLRS 2020-05-260		26						70	4	
HLRS 2025-03-100	2.5		R0.3	10	2.5	2.42		16 °	50	4
HLRS 2025-03-200		20		60			4			
HLRS 2025-03-300		30		70			4			
HLRS 2025-05-100		R0.5	10	50			4			
HLRS 2025-05-200			20	60			4			
HLRS 2025-05-300			30	70			4			
HLRS 2030-01-060	3	R0.1	6	3	2.92	16 °	55	6		
HLRS 2030-01-060 E							55	6		
HLRS 2030-01-160			16				60	6		
HLRS 2030-01-160 E							60	6		
HLRS 2030-01-260							26	70	6	
HLRS 2030-01-360								36	80	6
HLRS 2030-02-060		R0.2	6				55	6		
HLRS 2030-02-060 E							55	6		
HLRS 2030-02-160			16				60	6		
HLRS 2030-02-160 E							60	6		
HLRS 2030-02-260							26	70	6	
HLRS 2030-02-360								36	80	6



Модель	Рабочий диаметр D	Радиус угла CR	Длина раб. части l_1	Длина раб. части при различных углах наклона					
				30°	1°	1°30'	2°	3°	
HLRS 2020-03-040	2	R0.3	4	4.15	4.28	4.42	4.57	4.91	
HLRS 2020-03-040 E				4.15	4.28	4.42	4.57	4.91	
HLRS 2020-03-060			6	6.21	6.41	6.63	6.85	7.36	
HLRS 2020-03-060 E				6.21	6.41	6.63	6.85	7.36	
HLRS 2020-03-080			8	8.28	8.54	8.83	9.13	9.80	
HLRS 2020-03-080 E				8.28	8.54	8.83	9.13	9.80	
HLRS 2020-03-100			10	10.34	10.67	11.03	11.41	12.25	
HLRS 2020-03-100 E				10.34	10.67	11.03	11.41	12.25	
HLRS 2020-03-120			12	12.40	12.80	13.23	13.68	14.70	
HLRS 2020-03-120 E				12.40	12.80	13.23	13.68	14.70	
HLRS 2020-03-160			16	16.53	17.06	17.63	18.24	19.59	
HLRS 2020-03-200				20	20.65	21.32	22.03	22.79	
HLRS 2020-03-260			26	26.84	27.71	28.64			
HLRS 2020-05-040			2	R0.5	4	4.15	4.28	4.41	4.56
HLRS 2020-05-040 E		4.15				4.28	4.41	4.56	4.89
HLRS 2020-05-060		6			6.21	6.41	6.62	6.84	7.34
HLRS 2020-05-060 E					6.21	6.41	6.62	6.84	7.34
HLRS 2020-05-080		8			8.27	8.54	8.82	9.12	9.78
HLRS 2020-05-080 E					8.27	8.54	8.82	9.12	9.78
HLRS 2020-05-100		10			10.34	10.67	11.02	11.39	12.23
HLRS 2020-05-100 E					10.34	10.67	11.02	11.39	12.23
HLRS 2020-05-120		12			12.40	12.80	13.22	13.67	14.68
HLRS 2020-05-120 E					12.40	12.80	13.22	13.67	14.68
HLRS 2020-05-160		16			16.53	17.06	17.62	18.23	19.57
HLRS 2020-05-200					20	20.65	21.31	22.02	22.78
HLRS 2020-05-260		26			26.84	27.70	28.63		
HLRS 2025-03-100	2.5	R0.3			10	10.34	10.67	11.03	11.41
HLRS 2025-03-200			20	20.65	21.32	22.03			
HLRS 2025-03-300			30	30.97	31.97				
HLRS 2025-05-100		R0.5	10	10.34	10.67	11.02	11.39	12.23	
HLRS 2025-05-200			20	20.65	21.31	22.02			
HLRS 2025-05-300			30	30.97	31.96				
HLRS 2030-01-060	3	R0.1	6	6.21	6.42	6.63	6.86	7.37	
HLRS 2030-01-060 E				6.21	6.42	6.63	6.86	7.37	
HLRS 2030-01-160			16	16.53	17.06	17.64	18.25	19.61	
HLRS 2030-01-160 E				16.53	17.06	17.64	18.25	19.61	
HLRS 2030-01-260			26	26.84	27.71	28.64	29.64		
HLRS 2030-01-360				36	37.16	38.36	39.65	41.02	
HLRS 2030-02-060		3	R0.2	6	6.21	6.41	6.63	6.85	7.36
HLRS 2030-02-060 E					6.21	6.41	6.63	6.85	7.36
HLRS 2030-02-160				16	16.53	17.06	17.63	18.24	19.60
HLRS 2030-02-160 E					16.53	17.06	17.63	18.24	19.60
HLRS 2030-02-260				26	26.84	27.71	28.64	29.63	
HLRS 2030-02-360					36	37.15	38.36	39.64	41.02



Модель	Рабочий диаметр	Радиус угла	Длина рабочей части	Длина режущей части	Диаметр шейки	Угол конуса	Общая длина	Диаметр хвостов.	Цена
	D	CR	ℓ ₁	ℓ	φ _{d1}	β _{та}	L	d	
HLRS 2030-03-060	3	R 0.3	6	3	2.92	16 °	55	6	
HLRS 2030-03-060 E			55				6		
HLRS 2030-03-160			60				6		
HLRS 2030-03-160 E			60				6		
HLRS 2030-03-260			70				6		
HLRS 2030-03-360			80				6		
HLRS 2030-05-060		R 0.5	6				55	6	
HLRS 2030-05-060 E			55				6		
HLRS 2030-05-160			60				6		
HLRS 2030-05-160 E			60				6		
HLRS 2030-05-260			70				6		
HLRS 2030-05-360			80				6		
HLRS 2030-10-060		R 1	6				55	6	
HLRS 2030-10-060 E			55				6		
HLRS 2030-10-160			60				6		
HLRS 2030-10-160 E			60				6		
HLRS 2030-10-260			70				6		
HLRS 2030-10-360			80				6		
HLRS 2040-01-080	4	R 0.1	8	4	3.82	16 °	65	6	
HLRS 2040-01-080 E			65				6		
HLRS 2040-01-200			65				6		
HLRS 2040-01-200 E			65				6		
HLRS 2040-01-320			80				6		
HLRS 2040-01-480			100				6		
HLRS 2040-02-080		R 0.2	8				65	6	
HLRS 2040-02-080 E			65				6		
HLRS 2040-02-200			65				6		
HLRS 2040-02-200 E			65				6		
HLRS 2040-02-320			80				6		
HLRS 2040-02-480			100				6		
HLRS 2040-03-080		R 0.3	8				65	6	
HLRS 2040-03-080 E			65				6		
HLRS 2040-03-200			65				6		
HLRS 2040-03-200 E			65				6		
HLRS 2040-03-320			80				6		
HLRS 2040-03-480			100				6		
HLRS 2040-05-080		R 0.5	8				65	6	
HLRS 2040-05-080 E			65				6		
HLRS 2040-05-200			65				6		
HLRS 2040-05-200 E			65				6		
HLRS 2040-05-320			80				6		
HLRS 2040-05-480			100				6		

Модель	Рабочий диаметр	Радиус угла	Длина раб. части	Длина раб. части при различных углах наклона				
				30°	1°	1°30'	2°	3°
HLRS 2030-03-060	3	R0.3	6	6.21	6.41	6.62	6.85	7.35
HLRS 2030-03-060 E				6.21	6.41	6.62	6.85	7.35
HLRS 2030-03-160			16	16.53	17.06	17.63	18.23	19.59
HLRS 2030-03-160 E				16.53	17.06	17.63	18.23	19.59
HLRS 2030-03-260			26	26.84	27.71	28.63	29.62	
HLRS 2030-03-360			36	37.15	38.35	39.64	41.01	
HLRS 2030-05-060		R0.5	6	6.21	6.40	6.61	6.83	7.33
HLRS 2030-05-060 E				6.21	6.40	6.61	6.83	7.33
HLRS 2030-05-160			16	16.52	17.05	17.62	18.22	19.57
HLRS 2030-05-160 E				16.52	17.05	17.62	18.22	19.57
HLRS 2030-05-260			26	26.84	27.70	28.62	29.61	
HLRS 2030-05-360			36	37.15	38.35	39.63	41.00	
HLRS 2030-10-060		R1	6	6.20	6.39	6.59	6.80	7.28
HLRS 2030-10-060 E				6.20	6.39	6.59	6.80	7.28
HLRS 2030-10-160			16	16.51	17.04	17.59	18.19	19.52
HLRS 2030-10-160 E				16.51	17.04	17.59	18.19	19.52
HLRS 2030-10-260			26	26.83	27.68	28.60	29.57	
HLRS 2030-10-360			36	37.14	38.33	39.60	40.96	
HLRS 2040-01-080	4	R0.1	8	8.45	8.73	9.02	9.33	10.03
HLRS 2040-01-080 E				8.45	8.73	9.02	9.33	10.03
HLRS 2040-01-200			20	20.83	21.50	22.23	23.00	
HLRS 2040-01-200 E				20.83	21.50	22.23	23.00	
HLRS 2040-01-320			32	33.21	34.28	35.43		
HLRS 2040-01-480			48	49.71	51.32			
HLRS 2040-02-080		R0.2	8	8.45	8.72	9.01	9.33	10.02
HLRS 2040-02-080 E				8.45	8.72	9.01	9.33	10.02
HLRS 2040-02-200			20	20.83	21.50	22.22	22.99	
HLRS 2040-02-200 E				20.83	21.50	22.22	22.99	
HLRS 2040-02-320			32	33.20	34.28	35.43		
HLRS 2040-02-480			48	49.71	51.32			
HLRS 2040-03-080		R0.3	8	8.45	8.72	9.01	9.32	10.01
HLRS 2040-03-080 E				8.45	8.72	9.01	9.32	10.01
HLRS 2040-03-200			20	20.83	21.50	22.22	22.98	
HLRS 2040-03-200 E				20.83	21.50	22.22	22.98	
HLRS 2040-03-320			32	33.20	34.28	35.42		
HLRS 2040-03-480			48	49.71	51.31			
HLRS 2040-05-080		R0.5	8	8.45	8.71	9.00	9.31	9.99
HLRS 2040-05-080 E				8.45	8.71	9.00	9.31	9.99
HLRS 2040-05-200			20	20.82	21.49	22.21	22.97	
HLRS 2040-05-200 E				20.82	21.49	22.21	22.97	
HLRS 2040-05-320			32	33.20	34.27	35.41		
HLRS 2040-05-480			48	49.70	51.31			

Модель	Рабочий диаметр D	Радиус угла CR	Длина рабочей части l_1	Длина режущей части l	Диаметр шейки ϕ_{d1}	Угол конуса $\beta_{та}$	Общая длина L	Диаметр хвостов. d	Цена				
HLRS 2040-10-080	4	R1	8	4	3.82	16°	65	6					
HLRS 2040-10-080 E			65				6						
HLRS 2040-10-200			20				65	6					
HLRS 2040-10-200 E			65				6						
HLRS 2040-10-320			32				80	6					
HLRS 2040-10-480			48				100	6					
HLRS 2050-02-200	5	R0.2	20	5	4.82	16°	70	6					
HLRS 2050-02-400			40				90	6					
HLRS 2050-03-200		R0.3	20				70	6					
HLRS 2050-03-400			40				90	6					
HLRS 2050-05-200		R0.5	20				70	6					
HLRS 2050-05-400			40				90	6					
HLRS 2050-10-200		R1	20				70	6					
HLRS 2050-10-400			40				90	6					
HLRS 2060-01-120		6	R0.1				12	6	5.82	—	65	6	
HLRS 2060-01-120 E							65				6		
HLRS 2060-01-300	30			100	6								
HLRS 2060-01-300 E	100			6									
HLRS 2060-01-600	60		120	6									
HLRS 2060-02-120	R0.2		12	65	6								
HLRS 2060-02-120 E			65	6									
HLRS 2060-02-300			30	100	6								
HLRS 2060-02-300 E			100	6									
HLRS 2060-02-600			60	120	6								
HLRS 2060-03-120			R0.3	12	65	6							
HLRS 2060-03-120 E	65			6									
HLRS 2060-03-300	30			100	6								
HLRS 2060-03-300 E	100			6									
HLRS 2060-03-600	60		120	6									
HLRS 2060-05-120	R0.5		12	65	6								
HLRS 2060-05-120 E			65	6									
HLRS 2060-05-300			30	100	6								
HLRS 2060-05-300 E			100	6									
HLRS 2060-05-600	60		120	6									
HLRS 2060-10-120	R1		12	65	6								
HLRS 2060-10-120 E			65	6									
HLRS 2060-10-300			30	100	6								
HLRS 2060-10-300 E			100	6									
HLRS 2060-10-600	60	120	6										

Модель	Рабочий диаметр D	Радиус угла CR	Длина раб. части ℓ1	Длина раб. части при различных углах наклона					
				30°	1°	1°30'	2°	3°	
HLRS 2040-10-080	4	R 1	8	8.44	8.70	8.98	9.27	9.93	
HLRS 2040-10-080 E				8.44	8.70	8.98	9.27	9.93	
HLRS 2040-10-200			20	20.82	21.48	22.18	22.94		
HLRS 2040-10-200 E				20.82	21.48	22.18	22.94		
HLRS 2040-10-320				32	33.19	34.25	35.39		
HLRS 2040-10-480				48	49.69	51.29			
HLRS 2050-02-200	5	R 0.2	20	20.83	21.50				
HLRS 2050-02-400			40	41.46					
HLRS 2050-03-200		R 0.3	20	20.83	21.50				
HLRS 2050-03-400			40	41.45					
HLRS 2050-05-200		R 0.5	20	20.82	21.49				
HLRS 2050-05-400			40	41.45					
HLRS 2050-10-200		R 1	20	20.82	21.48				
HLRS 2050-10-400			40	41.44					
HLRS 2060-01-120		6	R 0.1	12					
HLRS 2060-01-120 E				30					
HLRS 2060-01-300					60				
HLRS 2060-01-300 E			R 0.2	12					
HLRS 2060-02-120	30								
HLRS 2060-02-120 E				60					
HLRS 2060-02-300	R 0.3		12						
HLRS 2060-02-300 E			30						
HLRS 2060-02-600				60					
HLRS 2060-03-120	R 0.5		12						
HLRS 2060-03-120 E			30						
HLRS 2060-03-300				60					
HLRS 2060-03-300 E	R 1		12						
HLRS 2060-03-600			30						
HLRS 2060-05-120				60					
HLRS 2060-05-120 E	R 1		12						
HLRS 2060-05-300			30						
HLRS 2060-05-300 E				60					
HLRS 2060-05-600	R 1		12						
HLRS 2060-10-120			30						
HLRS 2060-10-120 E				60					
HLRS 2060-10-300	R 1		12						
HLRS 2060-10-300 E			30						
HLRS 2060-10-600				60					

Режимы фрезерования для HRLS

Материал				Медь				Упрочненные Закаленные ст. NAK/SKD (30 ~ 45HRC)				Закаленные стали SKD/SKT (45 ~ 55HRC)				Закаленные стали SKD/SKH (55 ~ 65HRC)			
Модель	Раб. диаметр (mm)	Общая длина (mm)	L/D	Обороты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)	Обороты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)	Обороты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)	Обороты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)
	1	5	55,000	200	0.027	0.020	55,000	200	0.006	0.020	35,000	150	0.004	0.020	15,000	25	0.0015	0.015	
2003	0.3	1	3.3	60,000	500	0.030	0.020	60,000	500	0.007	0.020	35,000	350	0.005	0.020	22,000	35	0.004	0.015
		2	6.7	60,000	400	0.030	0.020	60,000	400	0.007	0.020	33,200	250	0.005	0.015	20,000	32	0.004	0.015
2004	0.4	1	2.5	50,900	610	0.048	0.063	50,900	510	0.013	0.072	40,700	370	0.011	0.072	24,200	40	0.004	0.072
		1.5	3.75	45,200	580	0.045	0.063	45,200	480	0.012	0.054	36,200	360	0.010	0.054	21,500	38	0.004	0.054
		2	5	40,400	540	0.042	0.054	40,400	450	0.011	0.045	32,300	330	0.009	0.045	19,200	35	0.004	0.045
		3	7.5	33,900	460	0.027	0.054	33,900	390	0.008	0.027	27,100	280	0.007	0.027	16,100	30	0.003	0.027
		4	10	30,000	220	0.010	0.045	30,000	340	0.006	0.014	24,000	250	0.005	0.014	14,300	27	0.002	0.014
2005	0.5	1	2	49,200	1,370	0.081	0.117	49,200	1,140	0.034	0.122	40,000	860	0.030	0.122	24,800	94	0.013	0.122
		2	4	39,900	1,000	0.075	0.108	39,900	830	0.029	0.117	32,500	630	0.026	0.117	20,100	68	0.011	0.117
		3	6	31,900	770	0.057	0.090	31,900	640	0.023	0.113	26,000	480	0.020	0.113	16,100	52	0.008	0.113
		4	8	29,100	660	0.039	0.072	29,100	550	0.016	0.108	23,700	410	0.014	0.108	14,600	45	0.006	0.108
		5	10	26,400	570	0.027	0.045	26,400	470	0.011	0.099	21,500	360	0.010	0.099	13,300	39	0.004	0.099
		6	12	24,200	480	0.021	0.018	24,200	400	0.007	0.090	19,700	300	0.006	0.090	12,200	33	0.003	0.090
2006	0.6	2	3.3	28,600	610	0.114	0.162	28,600	510	0.010	0.219	23,700	390	0.010	0.219	15,200	43	0.004	0.219
		3	5	23,800	480	0.090	0.135	23,800	400	0.008	0.108	19,700	300	0.007	0.108	12,600	33	0.003	0.108
		4	6.7	20,400	400	0.063	0.108	20,400	330	0.005	0.104	16,800	250	0.005	0.104	10,800	28	0.002	0.104
		6	10	16,800	300	0.036	0.045	16,800	250	0.003	0.099	13,900	190	0.003	0.099	8,900	21	0.001	0.099
		8	13.3	14,600	240	0.021	0.027	14,600	200	0.002	0.072	12,100	150	0.002	0.072	7,700	16	0.001	0.072
2007	0.7	4	5.7	18,400	480	0.087	0.162	18,400	400	0.008	0.117	15,500	310	0.008	0.117	10,200	35	0.004	0.117
		6	8.6	15,400	360	0.051	0.108	15,400	300	0.005	0.108	13,000	230	0.005	0.108	8,600	26	0.002	0.108
2008	0.8	4	5	17,500	540	0.132	0.198	17,500	450	0.014	0.117	15,000	360	0.015	0.117	10,200	41	0.007	0.117
		6	7.5	14,600	410	0.075	0.144	14,600	340	0.008	0.108	12,500	270	0.008	0.108	8,500	30	0.004	0.108
2010	1	2	2	17,600	1,100	0.210	0.450	17,600	920	0.035	0.270	15,300	750	0.040	0.270	10,900	89	0.020	0.270
		4	4	13,800	980	0.201	0.405	13,800	820	0.030	0.270	12,000	670	0.035	0.270	8,500	80	0.017	0.270
		6	6	11,300	790	0.117	0.387	11,300	650	0.021	0.216	9,800	540	0.024	0.216	7,000	64	0.012	0.216
		8	8	9,800	590	0.072	0.360	9,800	490	0.016	0.189	8,500	400	0.018	0.189	6,100	48	0.009	0.189
		10	10	8,800	390	0.048	0.315	8,800	320	0.011	0.126	7,600	270	0.013	0.126	5,400	32	0.006	0.126
		12	12	8,100	260	0.033	0.270	8,100	210	0.008	0.072	7,000	180	0.009	0.072	5,000	21	0.004	0.072
		16	16	7,000	230	0.018	0.225	7,000	190	0.004	0.027	6,100	160	0.005	0.027	4,300	19	0.002	0.027
		20	20	6,300	160	0.015	0.180	6,300	130	0.003	0.018	5,500	110	0.003	0.018	3,900	13	0.001	0.018



Материал				Медь				Упрочненные Закаленные ст. NAK/SKD (30 ~ 45HRC)				Закаленные стали SKD/SKT (45 ~ 55HRC)				Закаленные стали SKD/SKH (55 ~ 65HRC)			
Модель	Раб. диаметр (mm)	Общая длина (mm)	L/D	Обор- оты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)	Обор- оты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)	Обор- оты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)	Обор- оты (min ⁻¹)	Подача (mm/min)	a _p Осевая глубина (mm)	a _e Радиал. глубина (mm)
2012	1.2	6	5	9,400	700	0.186	0.468	9,400	580	0.018	0.090	8,400	490	0.022	0.090	6,200	60	0.011	0.090
		12	10	6,800	440	0.054	0.405	6,800	370	0.007	0.072	6,100	310	0.008	0.072	4,500	38	0.004	0.072
		20	16.7	5,400	250	0.021	0.240	5,400	210	0.003	0.018	4,800	180	0.003	0.018	3,500	22	0.002	0.018
2015	1.5	4	2.7	13,200	1,310	0.300	0.675	13,200	1,090	0.045	0.450	12,000	950	0.060	0.450	9,200	124	0.033	0.450
		6	4	10,600	1,240	0.282	0.630	10,600	1,030	0.041	0.405	9,700	900	0.055	0.405	7,400	117	0.030	0.405
		8	5.3	9,300	1,050	0.204	0.612	9,300	870	0.034	0.315	8,500	760	0.045	0.315	6,500	99	0.025	0.315
		10	6.7	8,500	900	0.150	0.567	8,500	750	0.032	0.288	7,800	650	0.042	0.288	6,000	85	0.023	0.288
		12	8	7,800	800	0.114	0.540	7,800	670	0.029	0.270	7,100	580	0.038	0.270	5,400	76	0.021	0.270
		16	10.7	6,800	620	0.066	0.450	6,800	510	0.015	0.180	6,200	450	0.020	0.180	4,700	58	0.011	0.180
		20	13.3	6,000	490	0.042	0.360	6,000	410	0.005	0.108	5,500	360	0.006	0.108	4,200	46	0.003	0.108
2020	2	4	2	15,300	1,500	0.330	0.900	15,300	1,250	0.046	0.900	14,300	1,130	0.065	0.900	11,500	162	0.039	0.900
		6	3	12,800	1,220	0.321	0.855	12,800	1,020	0.043	0.810	12,000	930	0.060	0.810	9,700	133	0.036	0.810
		8	4	11,200	1,120	0.267	0.810	11,200	930	0.039	0.720	10,400	850	0.055	0.720	8,400	121	0.033	0.720
		10	5	10,000	1,050	0.225	0.765	10,000	870	0.033	0.585	9,300	790	0.047	0.585	7,600	113	0.028	0.585
		12	6	9,100	980	0.186	0.720	9,100	820	0.031	0.450	8,500	740	0.044	0.450	6,900	107	0.026	0.450
		16	8	7,800	830	0.132	0.702	7,800	690	0.028	0.315	7,300	630	0.039	0.315	5,900	90	0.023	0.315
		20	10	7,000	770	0.093	0.666	7,000	640	0.017	0.198	6,600	580	0.024	0.198	5,300	84	0.014	0.198
		26	13	6,200	700	0.060	0.540	6,200	580	0.006	0.144	5,800	530	0.008	0.144	4,600	75	0.005	0.144
2025	2.5	10	4	10,500	1,220	0.339	0.855	10,500	1,020	0.052	0.540	10,000	960	0.075	0.540	8,400	154	0.048	0.540
		20	8	7,800	720	0.165	0.756	7,800	600	0.024	0.225	7,500	560	0.035	0.225	6,300	91	0.022	0.225
		30	12	6,300	540	0.069	0.630	6,300	450	0.011	0.180	6,000	420	0.016	0.180	5,000	67	0.010	0.180
2030	3	6	2	14,000	2,700	0.500	0.900	14,000	1,510	0.150	0.720	13,300	1,140	0.150	0.720	12,000	270	0.100	0.720
		16	5.3	9,200	1,160	0.321	0.810	9,200	960	0.081	0.630	8,800	730	0.081	0.630	7,900	173	0.054	0.630
		26	8.7	7,500	980	0.180	0.720	7,500	820	0.065	0.495	7,100	620	0.065	0.495	6,400	146	0.043	0.495
		36	12	6,400	710	0.090	0.630	6,400	590	0.022	0.180	6,100	440	0.022	0.180	5,500	105	0.014	0.180
2040	4	8	2	10,200	1,340	0.420	1.620	10,200	1,110	0.095	1.350	8,500	970	0.140	1.350	7,300	223	0.101	1.350
		20	5	6,900	1,190	0.384	1.440	6,900	990	0.054	0.900	5,800	860	0.080	0.900	4,900	198	0.058	0.900
		32	8	5,500	860	0.189	1.260	5,500	720	0.027	0.648	4,600	630	0.040	0.648	3,900	144	0.029	0.648
		48	12	4,600	430	0.093	1.080	4,600	360	0.007	0.315	3,900	310	0.010	0.315	3,300	72	0.007	0.315



Материал				Медь				Упрочненные Закаленные ст. NAK/SKD (30 ~ 45HRC)				Закаленные стали SKD/SKT (45 ~ 55HRC)				Закаленные стали SKD/SKH (55 ~ 65HRC)			
Модель	Раб. диаметр (mm)	Общая длина (mm)	L / D	Обор- оты (min ⁻¹)	Подача (mm/min)	a_p Осевая глубина (mm)	a_e Радиал глубина (mm)	Обор- оты (min ⁻¹)	Подача (mm/min)	a_p Осевая глубина (mm)	a_e Радиал глубина (mm)	Обор- оты (min ⁻¹)	Подача (mm/min)	a_p Осевая глубина (mm)	a_e Радиал глубина (mm)	Обор- оты (min ⁻¹)	Подача (mm/min)	a_p Осевая глубина (mm)	a_e Радиал глубина (mm)
2050	5	20	4	6,700	1,780	0.606	1.98	6,700	1,480	0.092	1.170	4,800	990	0.130	1.170	4,000	297	0.096	1.170
		40	8	4,600	850	0.297	1.53	4,600	710	0.046	0.900	3,300	470	0.065	0.900	2,800	143	0.048	0.900
2060	6	12	2	8,000	1,800	0.6	2.25	8,000	1,620	0.500	1.350	4,700	1,360	0.200	1.350	4,000	540	0.150	1.350
		30	5	4,500	1,060	0.546	1.98	4,500	880	0.396	1.260	2,600	740	0.158	1.260	2,200	294	0.119	1.260
		60	10	2,800	530	0.156	1.62	2,800	440	0.113	0.990	1,600	370	0.045	0.990	1,400	147	0.034	0.990

a_p : Осевая глубина (мм)

a_e : Радиальная глубина (мм)

