



NOZZLES *suitable for* WOODWARD L'ORANGE

Our complete range of
NOZZLES FOR WOODWARD-L'ORANGE® INJECTORS
suitable for large engines applications

On 9 September 1933, Rudolf L'Orange and his brother Harro founded the L'Orange Brothers Engine Accessories Company in Stuttgart. They developed and invented new injection systems such as the "zweimengendüse" for continuous atomization. The company was sold to MTU Germany in 1985 and then incorporated into the Tognum Group in 2006 (Rolls-Royce Power Systems AG since 2014). In 2018 Rolls-Royce Power Systems sold the company to its competitor Woodward in the USA. Nowadays **Woodward L'Orange GmbH** is a German engineering manufacturing company headquartered in Stuttgart. It is one of the leading manufacturers of injection systems for large diesel engines worldwide. It developed and produced the first common-rail system for large diesel engines. Woodward L'Orange is a supplier to engine builders from 1000 to 40000 kW. It designs and produces injection parts for most 4-stroke engines for both **marine and power plant applications**.

Check out in next pages our nozzles

Woodward-L'Orange

SEVEN Part Number	Photo	Stamping	Spray details	Ø	Cooled/ Uncooled	Opening Pressure (bar)	Injector Reference	Engine Brand	Engine type	Note and other ref.
NBW6910A NBW6910B NBW6910C		VUM-U910A/E VUM-U910B/E VUM-U910C/E	13x0,43x82° 13x0,39x82° 13x0,41x82°	10 10 10	Cooled Cooled Cooled	360 360 360	VUM-G014a VUM-G014b VUM-G014c	MAN B&W MAN B&W MAN B&W	32/40 CD 32/40 CD 32/40 CD	IMO1235 IMO1611 IMO1758
NLG10ACA NLG10ACC NLG10ACF NLG10ADA NLG10LBD NLG10LGQ NLG10LJG NLG10LUG NLG10LXA NLG10LXAA NLG10LXW NLG10LYB NLG10LZQ NLG10LZR NLG12AAH		LT-ACA LT-ACC LT-ACF LT-ADA LT-LBD LT-LGQ LT-LJG LT-LUG/E LT-LXA LT-LXA LT-LXW LT-LYB LT-LZQ LT-LZR LLT-AAH	8x0,34x145° 9x0,35x145° 8x0,35x150° 10x0,33x150° 8x0,20x150° 8x0,35x140° 8x0,25x150° 6x0,39x155° 9x0,35+1x0,20 9x0,35x140° 8x0,31x150° 7x0,36x140° 8x0,36x140° 8x0,36x150° 6x0,51x150°	6 7 7 7 6 6 6 6 6 6 6 6 6 6 7	Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled Uncooled	 350 bar 350 bar 350 bar	 VTO-G043a VTO-G030a VTO-G030e	 Rolls Royce Bergen Diesel Rolls Royce Bergen Diesel Deutz MWM Deutz MWM Deutz MWM MTU	 K K D440, D441 D440 (K), D441 (K) D440 (K), D441 (K) MA956	 022822 022991 1215 2978 6.0530.01.3.0003 10 HOLES 9 HOLES 1215 2995 6.0530.01.3.0029 1215 3004 6.0530.01.3.0039 590 017 05 12

NLG1490A		LTB-U900A	8x0,42x144°	6	Uncooled					DLLZ145T900a
NLG15BBE NLG15BBG		LTO-BBEm LTO-BBG	5x0,45x155° 8x0,37x132°	8 8	Uncooled Uncooled			Wärtsilä SWD	TM270 TE290	HL132T37H200P5
NLG15BEV NLG15BFH NLG15BFW NLG15BGR NLG15BHE NLG15BKV NLG15BKZ NLG15BLJ NLG15BLQ NLG15BMW NLG15BPF NLG15BPJ		LTO-BEV LTO-BFH LTO-BFW LTO-BGR LTO-BHE LTO-BKV LTO-BKZ LTO-BLJ LTO-BLQ LTO-BMW LTO-BPF/E LTO-BPJ	6x0,40x130° 5x0,38x110° 4x0,50x110° 4x0,55x110° 8x0,32x145° 10x0,39x148° 9x0,41x156° 10x0,33x150° 8x0,33x148° 8x0,33x148° 8x0,32x145° 10x0,32x148°	7 7 7 7 7 7 7 7 7 7 7 6	Uncooled Uncooled Uncooled Uncooled Cooled Cooled Cooled Cooled Cooled Uncooled Uncooled Cooled	 320 bar 320 bar 320 bar 280 bar 320 bar 320 bar 320 bar 320 bar	 VTO-G056a VTO-G087a VTO-G061b VTO-G061c VTO-G058a VTO-G087c VTO-G069a VTO-G249a VTO-G087d	Caterpillar MaK Caterpillar MaK Caterpillar MaK Caterpillar MaK MAN B&W MAN B&W MAN B&W Rolls Royce Bergen Diesel MAN B&W MAN B&W MAN B&W MAN B&W	M282AK M281 M331 - M332 M282 23/30 23/30A 28/32 28/32 K 23/30A 23/30 23/30A 23/30A	 IMO-17.02 IMO-17.06

NLG15BGZ NLG15BJH NLG15BNE NLG15BPG/EV		LTO-BGZ	8x0,36x150°	7	Cooled	320 bar	VTO-G072	Wärtsilä	WV22	IMO-17.01
		LTO-BJH	8x0,36x150°	7	Uncooled	320 bar	VTO-G071	Wärtsilä	WV22	
		LTO-BNE	10x0,39x148°	7	Cooled	320 bar	VTO-G074a	MAN B&W	28/32A	
		LTO-BPG	10x0,39x148°	7	Uncooled	320 bar	VTO-G248a	MAN B&W	28/32A	
NLG16089 NLG16090		LTO-U9089a/E	8x0,29x145°	6	Uncooled	450 bar	VTO-G112a	MAN B&W	16/24	
		LTO-U9089b/E	9x0,28x145°	6	Uncooled	450 bar	VTO-G112b	MAN B&W	16/24	
NLG16108		LTO-U9108a	8x0,34x159°	7	Uncooled		VTO-G166 VTO-G466	MTU	4000.01	
NMK15112		LTO-U9140b/E	10x0,31x140°	7	Uncooled			Caterpillar MaK	M20	A1/2 250 220 014
NMK15113		LTO-U9140a/E		7	Uncooled			Caterpillar MaK	M20	A1/3 250 220 032
NMK15114		LTO-U9140c/E	12x0,34x150°	7	Uncooled			Caterpillar MaK	M20	A1/4 250 220 034

NLG16171		LTO-U9171w/EV1	10x0,32x148°	7	Cooled					
NLG15BME NLG15BMQ NLG15BNG		LTO-BME/E LTO-BMQ LTO-BNG	7x0,43x145° 7x0,41x140° 7x0,41x145°	7 7 7	Uncooled Uncooled Uncooled	355 bar 355 bar 355 bar	VTO-G247a VTO-G247b VTO-G247c	Deutz KHD Deutz KHD Deutz KHD	BVM628 BVM628 BVM628	
NLG15BNZ NLG15BNZ1		LTO-BNZ LTO-BNZ	10x0,36x130° 10x0,36x130°	7 7	Cooled Cooled			Wärtsilä Wichmann Wärtsilä Wichmann	WX28	old version new version
NLG30UBQ NLG30UDR NLG30UFP		LU-UBQ LU-UDR LU-UFP	8x0,45x130° 8x0,40x130° 6x0,45x115°	8 8 8	Uncooled Uncooled Uncooled			Caterpillar MaK Caterpillar MaK Caterpillar MaK	M581 - M582 M451 M451	

NLG60033		VUM-U933	1x3,0	8	Uncooled			MAN B&W	GV23,5/33; GV30/45; VV30/45	
NLG60Y33		VUM-U933y	1x3,0	8	Uncooled			MAN B&W	GV23,5/33; GV30/45; VV30/45	
NLG60034		VUM-U934a/E	9x0,45x148°	8	Uncooled	400 bar	VUM-G008	MAN B&W	27/38	
NLG60036 NLG600361		VUM-U936a/E VUM-U936b/E	8x0,29x145° 9x0,28x145°	6 6	Uncooled Uncooled			MAN B&W MAN B&W	16/24 16/24	
NLG65906		VUO-U906	1x2.5	8	Uncooled			Wärtsilä SWD	TMA330 TMA5336 TEB450	

NLG62BAA NLG62BAC NLG62BAD NLG62BAE		VUO-BAA	6x0,55x130°	7	Uncooled			Deutz KHD	BVM366	273797C3
		VUO-BAC	6x0,45x130°	7	Uncooled	350 bar	VUO-G022c	Deutz KHD	BVM545	273797A3
		VUO-BAD	6x0,52x110°	7	Uncooled			Deutz KHD	BVM358	273797D3
		VUO-BAE	6x0,40x110°	7	Uncooled	350 bar	VUO-G022e	Deutz KHD	BVM536 BVM545	273797J3

NLG62BAF NLG62BAG NLG62BAK NLG62BAL NLG62BAM NLG62BAN NLG62CAA NLG62CAB NLG62CAC NLG62CAD NLG62CAE NLG65944 NLG65945 NLG65946		VUO-BAF	6x0,45x110°	7	Uncooled	350 bar	VUO-G022f	Deutz KHD	BVM545	273797K3
		VUO-BAG	6x0,40x130°	7	Uncooled	350 bar	VUO-G022g	Deutz KHD	BVM545	273797L3
		VUO-BAK	6x0,35x130°	7	Uncooled	350 bar	VUO-G022k	Deutz KHD	BVM536 BVM545	273797P3
		VUO-BAL	6x0,30x130°	7	Uncooled	350 bar	VUO-G022l	Deutz KHD	BVM536 BVM545	
		VUO-BAM	6x0,45x120°	7	Uncooled	350 bar	VUO-G022mb VUO-G022mc	Deutz KHD	BVM545	2032292KZ
		VUO-BAN	6x0,40x120°	7	Uncooled	350 bar	VUO-G022n	Deutz KHD	BVM545	2032435KZ
		VUO-CAA	6x0,55x110°	7	Uncooled	350 bar	VUO-G120a	Deutz KHD	BVM358	DO123-19-09-10
		VUO-CAB	6x0,55x120°	7	Uncooled	350 bar	VUO-G320b	Deutz KHD	BVM350	DO123-19-09-20
		VUO-CAC	6x0,50x110°	7	Uncooled	350 bar	VUO-G120c	Deutz KHD	BVM358	DO123-19-09-30
		VUO-CAD	6x0,50x120°	7	Uncooled	350 bar	VUO-G320da	Deutz KHD	BVM350	DO123-19-09-40
		VUO-CAE	6x0,60x120°	7	Uncooled			Deutz KHD	BVM350	D02020762
		VUO-U944a	6x0,60x110°	8	Uncooled	350 bar	VUO-G220aa VUO-G220ab	Deutz KHD	BVM350 BVM358	
		VUO-U944b	6x0,60x135°	8	Uncooled	350 bar	VUO-G420b	Deutz KHD	BVM350 BVM358	
		VUO-U944c	6x0,65x110°	8	Uncooled	350 bar	VUO-G220c VUO-G220ca	Deutz KHD	BVM350 BVM358	

NLG65909 NLG65910 NLG69A14 NLG67376 NLG67383 NLG67388 NLG67389 NLG67808		VUO-U909ay/E VUO-U910a VUO-U9014a/E VUO-U976a/E VUO-U976l/E VUO-U976p/E VUO-U976q/E VUO-U988a/E	8x0,52x130° 8x0,52x130° 8x0,54x140° 9x0,48x155° 10x0,48x160° 10x0,48x150° 10x0,50x150° 9x0,48x155°	8 8 8 8 8 8 8 8	Cooled Uncooled Cooled Cooled Cooled Cooled Cooled Uncooled	350 bar 350 bar 350 bar 350 bar 350 bar 280 bar	VUO-G055a VUO-G056a VUO-G174a VUO-G058 VUO-G058p VUO-G072	Deutz KHD Deutz KHD Deutz KHD Deutz MWM Wärtsilä Deutz MWM Deutz MWM Deutz MWM Wärtsilä	BVM540 BVM540 BVM640 D510, D511 Vasa 32 D510, DG510 D510, DG510 D510B Vasa 32	2001658KZ0125-19 2000506KZ0125-19 2092952
NLG65934 NLG65935 NLG67169		VUO-U932c VUO-U932d VUO-U969a	1x4.0 1x4.0 1x4.0	8 8 8	Cooled Cooled Cooled	350 bar 350 bar 260 bar 260 bar 260 bar 260 bar 350 bar 350 bar	VUO-G038c/E VUO-G036g VUO-G036r VUO-G136fb VUO-G136ib VUO-G236fb VUO-G236ib	Wärtsilä SWD Wärtsilä SWD Caterpillar MaK	TM410 TM410 M551 M552	
NLG66744 NLG66746 NLG66748 NLG66750 NLG66752 NLG66754 NLG66954 NLG66956 NLG66957 NLG66958 NLG66959		VUO-U954acy/E VUO-U954aey/E VUO-U954afy/E VUO-U954by/E VUO-U954fy/E VUO-U954gy/E VUO-U955a/E VUO-U955b/E VUO-U955c/E VUO-U955d/E VUO-U955e/E	8x0,60x140° 6x0,55x130° 8x0,53x140° 9x0,42x130° 6x0,50x110° 6x0,55x110° 5x0,55x120° 9x0,42x130° 9x0,40x130° 9x0,45x130° 5x0,60x110°	8 8 8 8 8 8 8 8 8 8 8	Cooled Cooled Cooled Cooled Cooled Cooled Uncooled Uncooled Uncooled Uncooled Uncooled	260 bar 300 bar 300 bar 300 bar 260 bar 300 bar	VUO-G065 VUO-G080b VUO-G080f VUO-G080g VUO-G047b VUO-G079b	Caterpillar MaK Caterpillar MaK Caterpillar MaK Caterpillar MaK Caterpillar MaK Caterpillar MaK Caterpillar MaK	M35 M453 M453 M453 M453 M453 M453	

NLG66960		VUO-U955f/E	6x0,55x110°	8	Uncooled	260 bar 300 bar 300 bar	VUO-G047f VUO-G247f VUO-G079f	Caterpillar MaK	M453	
NLG66961		VUO-U955g/E	6x0,60x110°	8	Uncooled			Caterpillar MaK	M453	
NLG66962		VUO-U955h/E	6x0,50x110°	8	Uncooled	260 bar 300 bar 300 bar	VUO-G047h VUO-G247h VUO-G079h	Caterpillar MaK	M453	
NLG66963		VUO-U955k/E	8x0,60x140°	8	Uncooled	260 bar	VUO-G066	Caterpillar MaK	M35	
NLG66964		VUO-U955i/E	6x0,45x110°	8	Uncooled					
NLG66965		VUO-U955l/E	8x0,47x140°	8	Uncooled			Caterpillar MaK	M453	
NLG66966		VUO-U955m/E	8x0,53x140°	8	Uncooled					
NLG67050		VUO-U967l	9x0,50x140°	8	Uncooled			S.E.M.T. Pielstick	PA6V280	
NLG67052		VUO-U967ly	9x0,50x140°	8	Uncooled	320 bar	VUP-G007ly	S.E.M.T. Pielstick	PA6V280	
NLG69013		VUO-U9013by/E		8	Cooled	260 bar	VUO-G048a	Caterpillar MaK	M453	

NLG68C99		VUO-U999c/E	9x0,51x130°	8	Cooled	350 bar	VUO-G054	Deutz MWM	D501	
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NLG70034		VUO-U9034b/E	10x0,53x150°	8	Cooled	330 bar	VUO-G087b	Deutz MWM	TBD645	1243 0021
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NLG70137		VUO-U9037c/E	12x0,50x150°	8	Cooled	450 bar	VUO-G106c	Caterpillar MaK	M32	E2/1 260 220 012
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NLG70196		VUO-U9096C/E	9x0,48x155°	8	Cooled	320 bar	VUO-G097c	Wärtsilä	WV32	009420080
NLG70214 NLG70215 NLG70216		VUO-U9115a/E VUO-U9115p/E VUO-U9116a/E	10x0,54x155° 10x0,54x158° 10x0,54x155°	9,00 9,00 9,00	Uncooled Uncooled Cooled	600 bar 600 bar 600 bar	VUO-G201a VUO-G203pV1 VUO-G202a	Wärtsilä Wärtsilä Wärtsilä	W32F W32F W32F	09500346 PAAE014820 09500345
NLG70241		VUO-U9141d/EV	9x0,335x156°		Uncooled	450 bar	VUO-G260dV	MAN	L21/31	D11.22107-1724
NLG70279		VUO-U9179c/EE	12x0,51x150°	8	Cooled					

NLG70281		VUO-U9181a	10x0,315x156°		Uncooled		VUO-G286A VUO-G315A	MAN	21/31	
NLG72104 NLG72106 NLG72107 NLG72512		VUY-U904a VUY-U904c VUY-U904d VUY-U912	5x0,55x140° 5x0,50x140° 8x0,35x130° 5x0,50x140°	8 8 8 8	Uncooled Uncooled Uncooled Cooled					U1A 5-50 140 U1A 550 140 5 U1A 835 130 U1AF 550 140 52
NLG72115 NLG72116 NLG72117		VUY-U905a VUY-U905b VUY-U905c	10x0,46x130° 10x0,60x140° 10x0,55x140°	8 8 8	Uncooled Uncooled Uncooled			Hanshin Hanshin Hanshin	6LU32 6LU32 6LU32/6LU38	

NLG72129		VUY-U909	5x0,50x140°	8	Cooled			SKL	NVD48-A2U	U1A550-140
NLG75V01		VVM-U901	1x4.50	11	Uncooled			MAN	RV/40/54	E11221050084
NLG76135		VVO-U935K	10x0,71x150°	10	Uncooled			Wärtsilä	W46	
NLG76143 NLG76153		VVO-U943g/E VVO-U953g/E	11x0,59x154° 11x0,59x155°	9 9	Cooled Cooled	450 bar	VVO-G036g	Wärtsilä Wärtsilä SWD	SW38 W38A	

NLG76176		VVO-U976L/E	12x0,57x155°	9	Uncooled					
NLG77A00		VVP-U900a	10x0,60x140°	10	Cooled			S.E.M.T. Pielstick	PC2-5 PC2-6	4 holes
NLG77A01		VVP-U900a	10x0,60x140°	10	Cooled			S.E.M.T. Pielstick	PC2-5 PC2-6	6 holes
NLG77B00		VVP-U900b	10x0,55x140°	10	Cooled			S.E.M.T. Pielstick	PC2-3DF PC2-5LCV	4 holes
NLG77B01		VVP-U900b	10x0,55x140°	10	Cooled			S.E.M.T. Pielstick	PC2-3DF PC2-5LCV	6 holes
NLG77C00		VVP-U900c	10x0,65x140°	10	Cooled			S.E.M.T. Pielstick	PC2-5 PC2-6	4 holes
NLG77C01		VVP-U900c	10x0,65x140°	10	Cooled			S.E.M.T. Pielstick	PC2-5 PC2-6	6 holes
NLG77D00		VVP-U900d	10x0,50x140°	10	Cooled			S.E.M.T. Pielstick	PC2-2 PC2-5	
NLG77E00		VVP-U900e	10x0,52x140°	10	Cooled			S.E.M.T. Pielstick	PC2-2 PC2-5	
NLG77F00		VVP-U900f	9x0,68x140°	10	Cooled			S.E.M.T. Pielstick		
NLG77I00		VVP-U900i	10x0,48x140°	10	Cooled			S.E.M.T. Pielstick		
NLG77L00		VVP-U900l	10x0,625x140°	10	Cooled			S.E.M.T. Pielstick	PC2-5	
NLG77M00		VVP-U900m	10x0,725x140°	10	Cooled			S.E.M.T. Pielstick	PC2-5	

NLG78101		VXP-U901a	10x1,00x140°	13	Cooled					
NLG79105		VXW-U905	1x3.0	10	Cooled					
NLG79200		VWK-U900A/E	11x0,72x150°	11	Uncooled			Caterpillar MaK	M43	J1/1
NLG79201		VWK-U901A/E	11x0,71x150°	11	Cooled			Caterpillar MaK	M43	J4/4
NLG79301		VWM-U901	1x4,5	10	Uncooled			MAN	DZ53/76/80	4D14852
NLG79502		VWW-U902a	1x2.0	10	Cooled					

NZS1065 NZS1070		WAF 1065-140-45 WAF 1070-140-45	10x0,65 10x0,70	12 12	Cooled Cooled			SKL SKL	NVD48-42 NVD48-42	G203011200 G203017000
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