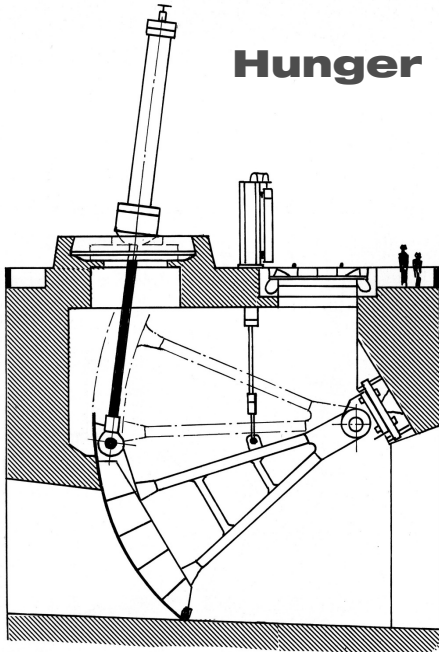


Reference List

HUNGER
Hydraulik

Walter Hunger GmbH & Co. KG – Hydraulikzylinderwerk – Rodenbacherstr. 50 – 97816 Lohr am Main

Hunger Hydroelectric Projects and Bridge Projects



HUNGER HYDRAULIC CYLINDER INSTALLATIONS:

- EUROPE
- ASIA
- NEAR EAST
- AFRIKA
- LATIN AMERIKA
- NORTH AMERIKA

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COUNTRY	PROJECT	CUSTOMER / PURCHASER	QUANT.	DESIGNATION AND SIZE
BELGIUM	MOEN BOSSNIT	DE PECKER, GENT	8	RADIAL GATE CYLINDER Ø 220/100 x 10100 mm
			3	BOTTOM OUTLET GATE CYLINDER Ø 450/250 x 3550 mm
NORWAY	STROSI	NOR MARINE, OSLO	4	SLIDE-GATE CYLINDER Ø 450/180 x 7750 mm
			4	BOTTOM OUTLET GATE CYLINDER Ø 550/220 x 2900 mm
GERMANY	KEMNADER WEIR RUHRTALSPERRE	DILLINGER STAHLBAU, SAARLOUIS	4	RADIAL GATE CYLINDER Ø 430/180 x 3565 mm WITH POWER- AND CONTROL-UNIT
GERMANY	HORNBERG 92	SULZER ESCHER WYSS	4	SERVOMOTOR-CYLINDER POWERLINE BALL-VALVE REGULATION POWER INTAKE Ø 660/510 x 1345 mm
GERMANY	HORNBERG 94	SCHLUCHSEEWERKE, FREIBURG	16	SERVOMOTOR-CYLINDER POWERLINE BALL-VALVE REGULATION POWER INTAKE Ø 660/460 x 1131 mm
GERMANY	KÖPCHENWERK HERDECKE	SULZER ESCHER WYSS / RHEINISCH WESTFÄLISCHE ELEKTRIZITÄTSWERKE	2	SERVOMOTOR-CYLINDER POWERLINE BALL-VALVE REGULATION POWER INTAKE Ø 530/200 x 1800 mm

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GERMANY	PUMPSPEICHERWERK LEITZACH	SULZER ESCHER WYSS / BAYERNWERKE	4	SERVOMOTOR-CYLINDER Ø 350/180 x 2200 mm
JUGOSLAVIA	DJERDAP DAM (IRON GATE)	PROGRESS-INVEST. / ENERGOPROJEKT	14	RADIAL GATE CYLINDER Ø 400/160 x 5850 mm
			12	RADIAL GATE CYLINDER Ø 500/200 x 13150 mm
			12	TURBINE INTAKE GATE CYLINDER Ø 600/220 x 18000 mm
			2	WHEEL GATE CYLINDER FOR SLUICE Ø 500/200 x 11650 mm
			2	WHEEL GATE CYLINDER Ø 500/200 x 13500 mm
			2	WHEEL GATE CYLINDER Ø 600/220 x 16230 mm
			2	WHEEL GATE CYLINDER Ø 600/220 x 18715 mm
			4	SLUICE GATE CYLINDER Ø 600/220 x 6900 mm
			2	SLUICE GATE CYLINDER Ø 500/220 x 6300 mm
4	WHEEL GATE CYLINDER FOR SLUICE Ø 400/160 x 5900 mm			

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TURKEY	KARAKAYA DAM, ON THE EUPHRAT RIVER	NOELL GMBH, WÜRZBURG FOR REPUBLIC OF TURKEY: FEDERAL DIRECTORATE OF STATE HYDRAULIC WORKS	2	BOTTOM OUTLET GATE CYLINDER Ø 870/360 x 6200 mm WITH LOCKING DEVICE
			2	BOTTOM OUTLET GATE CYLINDER Ø 870/360 x 4950 mm
			20	SPILLWAY RADIAL GATE CYLINDER Ø 420/160 x 5570 mm
TURKEY	KARAKAYA DAM, ON THE EUPHRAT RIVER	SULZER ESCHER WYSS, SWITZERLAND FOR REPUBLIC OF TURKEY: FEDERAL DIRECTORATE OF STATE HYDRAULIC WORKS	12	BALL-VALVE SERVEMOTOR CYLINDER TURBINE INLET Ø 500/250 x 1890 mm
TURKEY	ATA TÜRK DAM	NOELL GMBH, WÜRZBURG	12	MAIN SPILLWAY TAINTOR GATE CYLINDER Ø 520/220 x 6650 mm
			2	AUXILIARY SPILLWAY TAINTOR GATE CYLINDER Ø 300/160 x 6500 mm
			2	BOTTOM OUTLET GATE CYLINDER Ø 850/340 x 5550 mm WITH LOCKING DEVICE
			2	BOTTOM OUTLET GATE CYLINDER Ø 850/340 x 4300 mm
TURKEY	ATA TÜRK DAM	SULZER ESCHER WYSS, SWITZERLAND/GERMANY	16	GLOBE VALVE SERVOMOTOR CYLINDER POWER INTAKE GATE Ø 500/250 x 1890 mm

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TURKEY	ATA TÜRK DAM	SULZER ESCHER WYSS, SWITZERLAND/GERMANY	16	GUIDE VANE SERVOMOTOR CYLINDER Ø 550/180 x 472 mm WITH POSITION-TRANSDUCER FOR POWER INTAKE GATE Ø 180/80 x 4450 mm Ø 300/120 x 2000 mm Ø 250/100 x 1650 mm
GERMANY	DFDS GANGWAY FOR FERRY TERMINAL, HAMBURG	NOELL GMBH, WÜRZBURG	2	FLAP BRIDGE CYLINDER Ø 550/250 x 5920 mm
GERMANY	HYDROELECTRIC POWER PLANT EUTINGEN	NOELL GMBH, WÜRZBURG FOR MUNICIPAL PUBLIC WORKS OF PFORZHEIM	2	FLAP GATE CYLINDER Ø 580/200 x 3100 mm
GERMANY	RUHRTALSPERRE BIGGETAL	GG. NOELL GMBH, WÜRZBURG RUHRTALSPERRVEREIN	4	RADIAL GATE CYLINDER Ø 360/125 x 5560 mm
AUSTRIA	INN-RIVER POWER- PLANT KIRCHBICHL	VOEST ALPINE AG, LINZ	8 8 16	SLIDE GATE CYLINDER Ø 250/130 x 3200 mm SLIDE GATE CYLINDER Ø 320/160 x 6900 mm WITH POSITION-TRANSDUCER INTEGRATED LOCKING DEVICE
SPAIN	DE MADEIRA DAM	NOELL GMBH, WÜRZBURG FOR EMPRESA DE ELECTRICIDADE DE MADEIRA	3	TURBINE INTAKE GATE CYLINDER Ø 125/90 x 2500 mm
SPAIN	CATALAN DAM	NOELL GMBH, WÜRZBURG	6	BUTTERFLY VALVE SERVOMOTOR-CYLINDER Ø 125/90 x 2500 mm
BELGIUM	DUDZELE DAM	DE PECKER, GENT	3	FLAP GATE SERVOMOTOR CYLINDER Ø 700/350 x 3500 m

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GERMANY	POWER PLANT LANGWEID	NOELL GMBH, WÜRZBURG	2	RADIAL GATE CYLINDER Ø 280/125 x 1150 mm
			2	FLAP GATE CYLINDER Ø 440/150 x 2000 mm
GERMANY	POWER PLANT GERSTHOFEN	NOELL GMBH, WÜRZBURG	4	FLAP GATE CYLINDER Ø 300/120 x 2000 mm
GERMANY	VOHBURG POWER PLANT IRSCHING	NOELL GMBH, WÜRZBURG FOR RHEIN-MAIN-DONAU COMPANY, MUNICH	3	BOTTOM OUTLET GATE CYLINDER Ø 125/100 x 3100 mm
			3	SAFETY-GATE CYLINDER Ø 125/100 x 3100 mm
SPAIN	PORT OF BARCELONA	NOELL GMBH, WÜRZBURG	2	BASCULE BRIDGE CYLINDER Ø 560/300 x 5650 mm
TURKEY	BATMAN DAM	NOELL GMBH, WÜRZBURG	4	SERVOMOTOR FOR KAPLAN TURBINES Ø 450/180 x 360 mm
ICELAND	VATNSFELL DAM	VA TECH - ESCHER WYSS	2	RADIAL GATE CYLINDER Ø 250/180 x 7185 mm
			2	WHEEL GATE CYLINDER Ø 225/160 x 5850 mm
GERMANY	GOLDISTHAL POWER PLANT	NOELL GMBH, WÜRZBURG	6	GLOBE VALVE SERVOMOTOR CYLINDER POWER INTAKE GATE Ø 520/200 x 1640 mm
GREECE	ERINOS DAM	PETOLETKA, YUGOSLAVIA	2	SLIDE GATE CYLINDER Ø 250/210 x 2000 mm
			2	SLIDE GATE CYLINDER Ø 320/160 x 3900 m
AUSTRIA	ACHENSEE DAM	NOELL GMBH, WÜRZBURG	1	FLAP GATE CYLINDER Ø 320/110 x 820 mm (WATER FLUID)
			1	FLAP GATE CYLINDER Ø 250/110 x 800 mm (OIL FLUID)

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GERMANY	RO-RO- FERRY BRIDGE PUTTGARDEN	HYDRO CONTROL	2	BRIDGE CYLINDER, UPPER DECK Ø 220/110 x 5300 mm
			2	BRIDGE CYLINDER, LOWER DECK Ø 400/180 x 5500 mm
GERMANY	RO-RO- FERRY BRIDGE PUTGARDEN	HERION	2	BRIDGE CYLINDER, UPPER DECK Ø 220/110 x 5200 mm
			2	BRIDGE CYLINDER, LOWER DECK Ø 400/180 x 5400 mm
GERMANY	POLDER KOLLERINSEL DAM	IPM LEIPZIG	2	FLAP GATE CYLINDER Ø 340/140 x 1925 mm
GERMANY	PORT LOCK BREMERHAFEN	DSD STAHLBAU, DILLINGEN	2	RISING STEM VALVES Ø 160/80 x 2770 mm
			2	RISING STEM VALVES Ø 180/80 x 3600 mm
TURKEY	CAMLI GÖTZE DAM	NOELL GMBH, WÜRZBURG	2	GLOBE VALVE SERVOMOTOR CYLINDER FOR KAPLAN TURBINES Ø 250/140 x 550 mm
GERMANY	HEMFURTH DAM	NOELL GMBH, WÜRZBURG	1	FLAP GATE CYLINDER Ø 250/160 x 1000 mm
			1	SERVOMOTOR FOR KAPLAN TURBINES Ø 200/80 x 200 mm
GERMANY	GANGWAY FOR FERRY TERMINAL, ROSTOCK	DR. ROSCHIG GMBH	1	BRIDGE CYLINDER Ø 160/110 x 3700 mm
			2	BRIDGE CYLINDER Ø 63/45 x 2900 mm
GERMANY	CANAL LOCK UEFFINGEN	DR. ROSCHIG GMBH	4	RISING STEM VALVES Ø 160/90 x 2700 mm
			1	FLAP GATE CYLINDER Ø 140/100 x 6000 mm

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GERMANY	CANAL LOCK MINDEN	HINNERS GMBH	2	RISING STEM VALVES Ø 160/125 x 2340 mm
			1	FLAP GATE CYLINDER Ø 180/125 x 6000 mm
GERMANY	SCHLEI BRIDGE KAPPELN	IPM GMBH, LEIPZIG	2	BASCULE BRIDGE CYLINDER Ø 320/180 x 2550 mm
			2	BASCULE BRIDGE CYLINDER Ø 300/180 x 2550 mm
			4	LOCKING CYLINDER Ø 140/90 x 390 mm
			4	LOCKING CYLINDER Ø 125/70 x 400 mm
GERMANY	CANAL LOCK WEDLENSTEDT	DR. ROSCHIG GMBH	4	RISING STEM VALVES Ø 160/90 x 2700 mm
			1	FLAP GATE CYLINDER Ø 140/100 x 6700 mm
GERMANY	CANAL LOCK BREISACH	DR. ROSCHIG GMBH	4	GATE OPERATING CYLINDER Ø 125/80 x 2400 mm
			8	LOCK CYLINDER Ø 80/45 x 960 mm
SPAIN	PORT OF VALENCIA	DORNINGER, AUSTRIA	4	BASCULE BRIDGE CYLINDER Ø 440/230 x 5200 mm
			2	LOCKING CYLINDER Ø 160/100 x 600 mm
			2	LOCKING CYLINDER Ø 80/50 x 600 mm
GERMANY	HOHENWARTE POWER PLANT	VATTENFALL EUROPE	2	POWER INTAKE ROLLER GATE Ø 350/150 x 5340 mm
			1	POWER INTAKE ROLLER GATE Ø 150/100 x 3840 mm

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TURKEY	ERMENEK DAM	VA TECH, LINZ	4 1 2 1 2	BOTTOM OUTLET SLIDE GATE \varnothing 440/160 x 2360 mm POWER INTAKE ROLLER GATE \varnothing 250/100 x 6476 mm RADIAL GATE \varnothing 310/130 x 3848 mm RADIAL GATE \varnothing 150/70 x 2241 mm EMERGENCY GATE \varnothing 250/100 x 7200 mm
BULGARIA	TSANKOV KAMAK DAM	VA TECH, LINZ	2 2 1 8	BOTTOM OUTLET SERVICE GATE \varnothing 240/90 x 1490 mm BOTTOM OUTLET GUARD GATE \varnothing 240/90 x 1490 mm POWER INTAKE ROLLER GATE \varnothing 220/90 x 7854 mm RADIAL GATE \varnothing 150/90 x 3626 mm complete with power units
GERMANY	TRAVE BRIDGE	HOCHTIEF	2 4 4 2	BASCULE BRIDGE CYLINDER \varnothing 640/380 x 64300 mm LOCKING CYLINDER \varnothing 220/110 x 410 mm LOCKING CYLINDER \varnothing 100/63 x 285 mm DAMPING CYLINDER \varnothing 100/70 x 110 mm
UK	CANARY WHARF BRIDGE	KVAERNER MARKHAM	1	BRIDGE TELESCOPIC CYLINDER \varnothing 910 + \varnothing 800 x 18200 mm
RUSSIA	BALTIC DAM PETERSBURG	SGEM JOINT-STOCK COMPANY	4	DAM GATE CYLINDER \varnothing 800/320 x 11800 mm

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ROMANIA	PORTILE DE FIER I	VA-TECH GMBH / ANDRITZ HYDRO GMBH / HIDROELECTRICA S. A.	8	SERVOMOTORCYLINDER Ø 600/220 x 18000 mm Refurbishment
ROMANIA	PORTILE DE FIER II	VA-TECH GMBH / ANDRITZ HYDRO GMBH	4	SERVOMOTORCYLINDER Ø 600/220 x 18000 mm Refurbishment
GERMANY	KW RHEINFELDEN	Hans Künz GmbH	14 4	RADIAL GATE Ø 320/160 x 3350 mm CLAP GATE Ø 250/160 x 1400 mm complete with power units
GERMANY	KW WALLSTADT	E.ON WASSERKRAFT GmbH	4	POWER INTAKE GATE Ø 200/90 x 6300 mm complete with power units
PORTUGAL	BELVER DAM	GUSTAVO CUDELL LDA	2	POWER INTAKE GATE Ø 250/90 x 8300 mm
AUSTRIA	HYDROELECTRIC POWER PLANT ROSSHAUPTEN	HANS KÜNZ GES. m.b.H.	2 2	RADIAL GATE CYLINDER Ø 300/110 x 4160 mm POWER PACK
GERMANY	ZECHERINER BRIDGE PEENESTROM	DR. ROSCHIG HYDRAULIK GmbH	2	PIN-ENDED SUPPORT CYLINDER Ø 100/56 x 280 mm
GERMANY	EIDER BRIDGE “LEXFÄHRE”	MOHNSEN HYDRAULIK GmbH	2	ROTARY BRIDGE CYLINDER Ø 180/120 x 3200 mm WITH POSITION INDICATOR AND CERAPLATE COATED
GERMANY	STORCHENNEST SIEL FLOOD CONTROL FINKENWERDER	WILLMANN HYDRAULISCHE STEUERUNGSTECHNIK GmbH	4	DOUBLE ACTING CYLINDER Ø 140/90 x 3600 mm WITH POSITION MEASSURING SYSTEM
GERMANY	KW KLINGENBERG	E.ON WASSERKRAFT GmbH	2	POWER INTAKE GATE CYLINDER Ø 280/125 x 6300 mm COMPLETE WITH POWER UNIT

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GERMANY	LOGPORT HARBOUR DUISBURG- RHEINHAUSEN	BRUECKENBAU PLAUEN	2	RO-RO LIFT CYLINDER Ø 440/180 x 6200 mm COMPLETE WITH POWER UNIT, ELECTRIC CONTROL UNIT, PIPING AND INSTALLATION ON SITE
GERMANY	KW OBERNAU	E.ON WASSERKRAFT GmbH	4	POWER INTAKE GATE CYLINDER Ø 180/160 x 6100 mm COMPLETE WITH POWER UNIT
PORTUGAL	KW EDP ENERGIAS DE PORTUGAL	GUSTAVO CUDELL LDA	4	RADIAL GATE CYLINDER Ø 160/110 x 4100 mm
GERMANY	KW FREUDENBERG	E.ON WASSERKRAFT GmbH	2	POWER INTAKE GATE CYLINDER Ø 280/125 x 6300 mm COMPLETE WITH POWER UNIT AND INSTALLATION ON SITE
GERMANY	KW HEUBACH	E.ON WASSERKRAFT GmbH	4	POWER INTAKE GATE CYLINDER Ø 200/90 x 6300 mm COMPLETE WITH POWER UNIT AND INSTALLATION ON SITE
LUXEMBURG	PSW Vianden	DSD NOELL GmbH	1 1 4	POWER INTAKE GATE CYLINDER Ø 200/90 x 4180 mm GATE CYLINDER Ø 100/70 x 1370 mm LOCKING CYLINDER Ø 50/36 x 100 mm
GERMANY	CANAL LOCK FUHLBUETTEL	DR. ROSCHIG GmbH	2	HYDRAULIC CYLINDER Ø 160/100 x 4300 mm

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GERMANY	HYDRO DAM SPREMBERG	PTL PRÜFSTANDSTECHNIK LEIPZIG GMBH	5	WEDGE ROLLER SLUICE GATE CYLINDER Ø 160/110 x 2300 mm
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UK	TWIN SAIL BRIDGE; POOLE	HOCHTIEF	4	DOUBLE ACTING BRIDGE LIFTING HYDRAULIC CYLINDER Ø 540/360 x 3221 mm CERAPLATE COATED COMPLETE WITH MANIFOLD BLOCKS; POWER UNITS, SYSTEM MODELLING & SIMULATION; INSTALLATION & TRAINING ON SITE
GERMANY	HUNTE BRIDGE; HAMBURG	IPM GmbH	2	BASCULE BRIDGE CYLINDER Ø 460/260 x 6730 mm CERAPLATE COATED WITH MANIFOLD BLOCKS

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COUNTRY	PROJECT	CUSTOMER / PURCHASER	QUANT.	DESIGNATION AND SIZE
NEPAL	MARSYANGDI	MARSYANGDI HYDRO ELECTRIC KRUPP INDUSTRY & GG. NOELL GMBH, WÜRZBURG	8	RADIAL GATE CYLINDER Ø 420/180 x 8600 mm
CHINA	MANWAN	YUNNAN PROVINCIAL ELECTRIC POWER BUREAU 157 DONGFENGDONGLU KUNMING/PROVINZ YUNNAN	10	RADIAL GATE CYLINDER Ø 410/230 x 8300 mm
CHINA	WUQIANQXI	HUNAN WUQIANQXI HYDROELECTRIC POWER CO. LIZISHAN, SHA ZITANG	9 2	POWER- AND CONTROL-UNIT WITH ELECTRIC EQUIPMENT AND CONTROL- CONSOLE RADIAL GATE CYLINDER Ø 500/240 x 11200 mm
VIETNAM	DAN TIENG IRRIGATION	CONSTRUCTION AND MATERIAL EQUIPMENT SUPPL. COMP. VN BINH/HO CHI MINH C.	12 3	RADIAL GATE SERVOMOTOR-CYLINDER Ø 200/90 x 4600 mm HYDRAULIC POWER-UNIT AND INSTALLATION-EQUIPMENT
PAKISTAN	MANGLA DAM, WEST PAKISTAN	VOEST ALPINE, LINZ WAPDA =WATER AND POWER DEVELOPEMENT AUTHORITY	1	SLIDE GATE CYLINDER Ø 660/240 x 12415 mm
INDONESIA	SINGKARAK	GG. NOELL GMBH, WÜRZBURG FOR MINISTRY OF MINES AND ENERGY INDONESIA	8 4	RADIAL GATE CYLINDER Ø 160/90 x 2150 mm POWER INTAKE GATE CYLINDER Ø 80/56 x 1250 mm

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INDIA	SARDAR SAROVAR	TEXMACO COMPANY	6	POWER INTAKE GATE CYLINDER Ø 380/110 x 7000 mm WITH POSITION-INDICATOR AND HYDRAULICALLY OPERATED LOCKING DEVICE, MANIFOLD VALVE-BLOCK. SHIPMENT COMPLETE WITH POWER- AND CONTROL-UNIT
INDIA	SARDAR SAROVAR	TRIVENI COMPANY	6	BOTTOM OUTLET GATE CYLINDER Ø 710/300 x 4000 mm WITH POSITION-INDICATOR AND HYDRAULICALLY OPERATED LOCKING DEVICE, MANIFOLD VALVE-BLOCK. SHIPMENT COMPLETE WITH POWER- AND CONTROL-UNIT
PAKISTAN	TARBELA DAM WEST PAKISTAN	VOEST ALPINE, LINZ / T.A.M.S, USA WAPDA =WATER AND POWER DEVELOPMENT AUTHORITY	4 2 2 2	MAIN HOIST CYLINDER Ø 650/410 x 8680 mm HYDRAULIC ACTUATOR WATER/OIL Ø 1200/4207180 x 2000 mm DOGGING CYLINDER Ø 300/80 x 205 mm ECCENTRIC TRUNNION OPERATING CYLINDER Ø 540/240 x 1240 mm
PAKISTAN	TARBELA DAM WEST PAKISTAN	SOREFAME, PORTUGAL / T.A.M.S, USA, and WAPDA =WATER AND POWER DEVELOPMENT AUTHORITY	8	SERVO MOTOR HOIST CYLINDER Ø 600/270 x 19000 mm

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PAKISTAN	TARBELA DAM WEST PAKISTAN	METALNA MARIBOR / T.A.M.S, USA WAPDA =WATER AND POWER DEVELOPMENT AUTHORITY	6	BOTTOM OUTLET GATE CYLINDER Ø 600/250 x 14500 mm
PAKISTAN	TARBELA DAM WEST PAKISTAN	SULZER ESCHER WYSS, SWITZERLAND WAPDA =WATER AND POWER DEVELOPMENT AUTHORITY	24	RADIAL GATE CYLINDER Ø 410/230 x 8300 mm
INDIA	NAGARJUNA SAGAR	PREFAB GRATTINGS	2	POWER INTAKE GATE CYLINDER Ø 320/110 x 9200 mm WITH MANUAL LOCKING-DEVICE AND MANIFOLD-VALVE-BLOCK
INDIA	BARGI DAM	TUNGABHADRA CORP.	2	POWER INTAKE GATE CYLINDER Ø 280/90 x 8600 mm WITH MANUAL LOCKING-DEVICE
INDIA	TANAKPUR	TUNGABHADRA CORP.	6	POWER INTAKE GATE CYLINDER Ø 330/110 x 10500 mm WITH POSITION-INDICATOR MANUALLY OPERATED LOCKING DEVICE, MANIFOLD VALVE-BLOCK. SHIPMENT COMPLETEWITH POWER- AND CONTROL-UNIT
			2	POWER INTAKE GATE CYLINDER Ø 270/80 x 5300 mm WITH SHIFTER ROD
INDIA	MANI DAM	TUNGAHABDRA CORP.	4	BOTTOM OUTLET GATE CYLINDER Ø 580/200 x 2750 mm WITH SHIFTER ROD, MANUAL LOCKING DEVICE

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INDIA	CHAMERA	HUNGER U.S.	17	RADIAL GATE CYLINDER Ø 425/180 x 10708 mm
INDIA	KADANA DAM	SOUTHERN STRUCTURALS	4	POWER INTAKE GATE CYLINDER Ø 370/125 x 6100 mm WITH MANIFOLD VALVE-BLOCK. SHIPMENT INCLUDING POWER-UNIT
		PREFAB GRATINGS CORP.	3	POWER INTAKE GATE CYLINDER Ø 300/110 x 12300 mm MANUAL LOCKING DEVICE
		PRECIMAX CORP.	1	POWER INTAKE GATE CYLINDER Ø 230/90 x 6500 mm WITH POSITION INDICATOR
		TUNGAHABDRA CORP.	1	POWER INTAKE GATE CYLINDER Ø 355/90 x 9180 mm
			3	POWER INTAKE GATE CYLINDER Ø 490/120 x 8100 mm WITH MANUAL LOCKING DEVICE
		TUNGAHABDRA CORP.	6	BOTTOM OUTLET GATE CYLINDER Ø 340/140 x 4750 mm WITH SHIFTER ROD, MANUAL LOCKING DEVICE
INDIA	JAKHAM DAM	TUNGAHABDRA CORP.	4	BOTTOM OUTLET GATE CYLINDER Ø 540/180 x 2500 mm WITH SHIFTER ROD, MANUAL LOCKING DEVICE
INDIA	SUPA DAM	TUNGAHABDRA CORP.	4	BOTTOM OUTLET GATE CYLINDER Ø 985/240 x 3500 mm WITH SHIFTER ROD, MANUAL LOCKING DEVICE

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		TUNGAHABDRA CORP.	2	POWER INTAKE GATE CYLINDER Ø 520/125 x 6300 mm WITH SHIFTER ROD, MANUAL LOCKING DEVICE
		TUNGAHABDRA CORP.	2	POWER INTAKE GATE CYLINDER Ø 240/70 x 4400 mm WITH MANUAL LOCKING DEVICE
		TRIVENI CORP.	1	POWER INTAKE GATE CYLINDER Ø 410/170 x 7000 mm
INDIA	SUPA	TUNGAHABDRA CORP.	4	POWER INTAKE GATE CYLINDER Ø 520/125 x 6300 mm WITH PISTON LOCKING DEVICE
SRI LANKA	RANDENIGALA 83	SULZER ESCHER WYSS FOR MAHAWELI AUTHORITY OF SRI LANKA	2	INLET VALVE SERVOMOTOR CYLINDER Ø 420/180 x 1400 mm
PAKISTAN	CHASHMA DAM	NOELL, WUERZBURG	2	INLET GATE CYLINDER Ø 360/110 x 9200 mm
TURKEY	CATALAN DAM	NOELL WUERZBURG	2	GLOBE VALVE CYLINDER FOR KAPLAN TURBINES Ø 300/180 x 1500 mm
INDIA	TEESTA DAM	SINHA, INDIA		POWER INTAKE GATE CYLINDER Ø 250/80 x 11200 mm
NEPAL	KALI GANDAKI	DSD – NOELL, WUERZBURG	4	RADIAL GATE CYLINDER Ø 380/160 x 13450 mm
			2	RADIAL GATE CYLINDER Ø 420/160 x 13500 mm
			12	RADIAL GATE CYLINDER Ø 260/110 x 9580 mm
			2	FLAP CYLINDER Ø 360/320 x 5620 mm
			24	SLIDING GATE CYLINDER

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			8	Ø 140/80 x 3150 mm INTAKE GATE CYLINDER
			1	Ø 220/110 x 1780 mm INTAKE GATE CYLINDER
			1	Ø 300/125 x 4050 mm INTAKE GATE CYLINDER
			12	Ø 160/90x 2600mm INTAKE GATE CYLINDER
				Ø 220/150 x 5050 mm
IRAN	DASH A ABBAS DAM	NEYRPERSE; IRAN	2	WHEEL GATE CYLINDER Ø 330/125 x 5800 mm
IRAN	SEY MARIEH DAM	NEYRPERSE; IRAN	2	WHEEL GATE CYLINDER Ø 360/125 x 12250 mm
IRAN	ZARINEH ROOD	NEYRPERSE; IRAN	20	SLUICE GATE CYLINDER Ø 180/80 x 3100 mm
			5	POWER PACK
IRAN	KARUN III	DSD – NOELL, WUERZBURG	4	RADIAL GATE CYLINDER Ø 520/250 x 11100 mm
INDONESIA	KALAYAN II DAM	IMPISA ARGENTINA	2	INTAKE RADIAL GATE CYLINDER Ø 320/115 x 6300 mm
IRAN	GOLESTAN DAM	FANAVERY NOVIN NIROO CO. LTD.; IRAN	6	SERVICE AND EMERGENCY SLIDE GATE SERVOMOTOR CYLINDER Ø 180/75 x 1700 mm
			2	WITH POSITION IDICATOR POWER PACK AND ELECTRIC CONTROL SYSTEM
IRAN	SAHAND DAM	FANAVERY NOVIN NIROO CO. LTD.; IRAN	2	SERVICE AND EMERGENCY SLIDE GATE SERVO MOTOR CYLINDER Ø 240/125 x 1500 mm
			1	WITH POSITION IDICATOR POWER PACK AND ELECTRIC CONTROL SYSTEM
IRAN	DELVARI DAM	FANAVERY NOVIN NIROO CO. LTD.; IRAN	2	SERVICE RADIAL GATE CYLINDER Ø 320/180 x 2500 mm

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			2	WITH ELECTRONIC TRANSDUCER EMERGENCY SLIDE GATE CYLINDER Ø 180/110 x 3300 mm
			2	WITH POSITION INDICATOR HYDRAULIC POWER PACK FOR RADIAL GATE AND WHEEL GATE WITH ELECTRIC CONTROL SYSTEM
IRAN	SABALAN DEVAGLIDE	FANAVARY NOVIN NIROO CO. LTD.; IRAN	2	SERVICE AND EMERGENCY SLIDE GATE CYLINDER Ø 210/100 x 2500 mm
			2	SERVICE AND EMERGENCY SLIDE GATE CYLINDER Ø 240/110 x 2510 mm
			2	WITH MECH. GATE POSITION INDICATOR AND 4 LIMIT SWITCHES POWER PACK AND ELECTRIC CONTROL SYSTEM
VIETNAM	PLEIKRONG DAM	INVESTMENT CONSULTANT AND TECHNICAL IND. SERVICE COMP. -MIE CORP.-ISC	12	RADIAL GATE CYLINDER Ø 400/250 x 7420 mm
VIETNAM	QUANG TRI DAM	MACHINE AND INDUSTRIAL EQUIPMENT CORPORATION MIE	6	RADIAL GATE CYLINDER Ø 280/140 x 5410 mm
			1	INTAKE GATE CYLINDER Ø 250/120 x 3300 mm
				COMPLETE WITH POSITION INDICATOR; POWER PACKS AND ELECTRICAL CONTROL
CHINA	CAO'E RIVER DAM	JIANGSU WUJIN HYDRAULIC HOIST LTD.	56	PISTON RODS FOR HYDRAULIC CYLINDERS Ø 180 x 6935 mm
				CERAPLATE COATED WITH CIPS TRANSDUCER SYSTEM

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CHINA	TIANJIN HAIHE RIVER	TIANJIN HAIHE WATERPOWER	16	PISTON RODS FOR HYDRAULIC CYLINDERS \varnothing 125 x 13130 mm CERAPLATE COATED WITH CIPS TRANSDUCER SYSTEM
CHINA	SANZUODIAN RESERVOIR FLOOD DISCHARGE TUNNEL	JIANGSU WUJIN HYDRAULIC HOIST LTD.	2	PISTON RODS FOR HYDRAULIC CYLINDERS \varnothing 250 x 11038 mm CERAPLATE COATED WITH CIPS TRANSDUCER SYSTEM
KOREA	4 RIVER / SUNGCHEON DAM	STAUFF KOREA / KWATER	5 5	HYDRAULIC CYLINDERS \varnothing 400/230 x 13000 mm HYDRAULIC CYLINDERS \varnothing 460/250 x 13000 mm INCLUDING CIPS TRANSDUCER SYSTEM
VIETNAM	SEREPOK 4A DAM	BUON DON HYDROPOWER JOINT STOCK COMPANY	2	HYDRAULIC CYLINDERS \varnothing 250/110 x 6200 mm WITH MOUNTED VALVE BLOCK, PIPING ON CYLINDER AND PROXIMITY SWITCHES
CHINA		JANGSU CHENGUANG SUNDE HYDRAULIC EQUIPMENT CO., LTD.	8 10 2	PISTON RODS FOR HYDRAULIC CYLINDERS \varnothing 110 x 7342 mm PISTON RODS FOR HYDRAULIC CYLINDERS \varnothing 150 x 7179 mm PISTON RODS FOR HYDRAULIC CYLINDERS \varnothing 180 x 7300 mm CERAPLATE COATED

Table of References - **Section North America**

COUNTRY	PROJECT	CUSTOMER / PURCHASER	QUANT.	DESIGNATION AND SIZE
EGYPT	NEW ESNA DAM	DE PRETTO-ESCHER WYSS, ITALY FOR MINISTRY OF PUBLIC WORKS AND WATER RESOURCES	12	GUIDE VANE SERVOMOTOR CYLINDER Ø 420/200 x 1353 mm
EGYPT	ASSUAN II DAM	METALNA MARIBON INGALAVIA FOR MINISTRY OF PUBLIC WORKS AND WATER RESORCES	41 8	RADIAL GATE CYLINDER Ø 330/180 x 7300 mm POWER INTAKE GATE CYLINDER Ø 400/140 x 8300 mm
IRAQ	MOSUL DAM	NOELL GMBH, WÜRZBURG	12 2	RADIAL GATE CYLINDER Ø 350/180 x 5660 mm BOTTOM OUTLET GATE CYLINDER Ø 140/80 x 5360 mm
SUDAN	SIDI SALEM DAM	VOEST ALPINE AG, LINZ	4 4	WHEEL GATE CYLINDER Ø 340/140 x 7330 mm RADIAL GATE CYLINDER Ø 360/200 x 7024 mm
IRAN	JIROFT DAM	NOELL GMBH, WÜRZBURG FOR OWNER MINISTRY OF ENERGY IRAN	4	WHEEL GATE CYLINDER Ø 440/160 x 8300 mm
NIGERIA	BENUE DAM	VOEST ALPINE AG, LINZ WAAGNER BIRO FOR FEDERAL GOVERNMENT OF NIGERIA	12	GATE ZYLINDER Ø 360/120 x 11110 mm
SOUTH AFRICA	PALMIET DAM	HYFLO CORP.	4	INTAKE EMERGENCY GATE CYLINDER Ø 350/210 x 8000 mm
EGYPT	NAGA HAMMADI	DSD NOELL, WUERZBURG	12	REGULATOR GATE CYLINDER Ø 100/70 x 3500 mm

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COUNTRY	PROJECT	CUSTOMER / PURCHASER	QUANT.	DESIGNATION AND SIZE
USA	ARKANSAS 9 ARKANSAS RIVER LOCK AND DAM	VOEST ALPINE AG, LINZ FOR ARKANSAS ELECTRIC COOPORATIVE CORP.	3	WHEEL GATE CYLINDER Ø 380/140 x 10300 mm
USA	WATERWAY LOCK ILLINOIS	HUNGER US	4	SERVOMOTOR CYLINDER FOR SLIDE GATE Ø 530/220 x 4318 mm INCLUDING ALL SUPPORT-CYLINDERS
USA	W.T. LOVE GENERATING STATION	NEYPIC GRENOBLE, FRANCE FOR VANCEBURGH ELECTRIC LIGHT HEAD AND POWER SYSTEM	4	SERVOMOTOR-CYLINDER FOR TUBINE POWER INTAKE-GATE Ø 320/90 x 8980 mm
USA	MISSISSIPPI RIVER POWER PLANT VIDALIA, LOUISIANA	HUNGER HYDRAULIK U.K.	8	OUTLET SLUICE GATE CYLINDER Ø 405/150 x 10290 mm WITH HYDRAULIC-CONTROL-UNIT
USA	LAKE BRAZOS DAM	HUNGER US FOR CITY OF WACO, TEXAS	24	GATE CYLINDER Ø 250/140 x 2565 mm
USA	RED RIVER, VICKSBURG MISSISSIPPI	HUNGER US FOR HARDIE-TYNES MANUFACTURING CO.	2 2	MITER GATE CYLINDER Ø 355/150 x 4419,6 mm MITER GATE CYLINDER Ø 305/125 x 2876,6 mm
USA	BONNEVILLE FLAP BRIDGE, COLUMBIA RIVER	HUNGER US	2 2	NAVIGATION LOCK CYLINDER Ø 304/177 x 2477 mm NAVIGATION LOCK CYLINDER Ø 127/50,8 x 483 mm
USA	WADELL DAM	HUNGER US FOR U.S.D.I. BUREAU OF RECALAMATATION	2	GATE CONTROL CYLINDER Ø 560/165 x 2160 mm
USA	HARDIE-TYNES PROJECT	HUNGER US	2 2	GATE CYLINDER Ø 510/165 x 5245 mm GATE CYLINDER Ø 560/165 x 2159 mm
USA	COWLITZ FALLS PROJECT	GG. NOELL GMBH, WÜRZBURG FOR PUBLIC UTILITY DISTRICT	2	RADIAL GATE CYLINDER Ø 340/180 x 1135 mm

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		WASHINGTON	2	WHEEL GATE CYLINDER Ø 300/90 x 5850 mm
USA	OLMSTED DAM	CORP OF ENGINEERS	2	FLAP GATE CYLINDER Ø 355/197 x 4039 mm
USA	LOWER COLORADO RIVER DAM	HOPE GROUPE	21	FLAP GATE CYLINDER Ø 255/140 x 3137 mm WITH CERAPLATE AND CIPS- SYSTEM
USA	ROCKY MOUNTAIN	HUNGER US	4	SPHERICAL VALVE SERVO MOTOR CYLINDERS Ø 540/215 x 1856 mm WITH MECHANICAL LOCKING DEVICE

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COUNTRY	PROJECT	CUSTOMER / PURCHASER	QUANT.	DESIGNATION AND SIZE
ARGENTINA	ALFAFAL DAM	BELL-ESCHER WYSS, SWITZLAND ALCEM	2	TURBINE CONTROL CYLINDER Ø 600/360 x 990 mm
ARGENTINA	YACIRETO ELTUNAL LOS ALISOS	IMPESA, CORP., ARGENTINA	4 20	BOTTOM OUTLET GATE CYLINDER Ø 340/240 x 4460 mm RADIAL GATE CYLINDER Ø 160/100 x 3300 mm
BRAZIL	MOXOTO & ITAIPU DAM	ISHIHAWAJIMA DO, BRAZIL FOR ELECTROBRAS	4	BOTTOM OUTLET GATE CYLINDER Ø 380/140 x 2810 mm
BRAZIL	ECELSA DAM	ISHIHAWAJIMA DO, BRAZIL FOR ELECTROBRAS TOGETHER WITH NISSKO WAI, JAPAN	9	TURBINE INLET GATE CYLINDER Ø 470/200 x 12500 mm CYLINDER COMPLETE WITH POWER-UNIT
BRAZIL	PAULO ALFONSI IV	ISHIHAWAJIMA DO, BRAZIL FOR ELECTROBRAS	6 3	TURBINE INLET GATE CYLINDER Ø 425/160 x 16200 mm POWER- AND CONTROL-UNIT
BRAZIL	DE PALMAR POWER PLANT	ISHIHAWAJIMA DO, BRAZIL FOR ELECTROBRAS	9 3	TURBINE INLET GATE CYLINDER Ø 425/160 x 16200 mm POWER- AND CONTROL-UNIT
COLUMBIA	SAN CARLOS POWER PLANT	SULZER ESCHER WYSS, GERMANY FOR ISA - INTERCONIXION ELECTRICA SA	20	TURBINE CONTROL CYLINDER Ø 530/160 x 9800 mm
VENEZUELA	GURI DAM	- HARZA ENGINEERING COMP, USA, BOETTICHER, SPAIN - EDELGAS, VENEZUELA	21	RADIAL GATE CYLINDER Ø 580/380 x 15100 mm
GUATEMALA	PUEBLO VIEJO DAM	ZSCHOKKE WERTMANN, SWITZERLAND HYDROELECTRICA, GUATEMALA	1	BOTTOM OUTLET GATE CYLINDER Ø 400/220 x 3900 mm COMPLETE WITH POWER- AND CONTROL- UNIT WITH MANUAL LOCKING DEVICE

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			1	POWER INTAKE GATE CYLINDER Ø 200/110 x 4500 mm COMPLETE WITH POWER- AND CONTROL-UNIT WITH HYDRAULICALLY OPERATED LOCKING DEVICE
ARGENTINA	ALICURA DAM	NERPIC, GRENOBLE FRANCE	2	BOTTOM OUTLET SERVOMOTOR-CYLINDER Ø 580/200 x 4500 mm WITH MANUALLY OPERATED LOCKING DEVICE
			2	BOTTOM OUTLET SERVOMOTOR-CYLINDER Ø 580/200 x 3800 mm WITH MANUALLY OPERATED LOCKING DEVICE
			2	BOTTOM OUTLET SERVOMOTOR-CYLINDER Ø 420/150 x 4200 mm WITH MANUALLY OPERATED LOCKING DEVICE
			1	SERVOMOTOR-CYLINDER FOR EMERGENCY GATE Ø 380/125 x 10800 mm
MEXICO	HUITES DAM	MCE VOEST ALPINE, LINZ / COMISSION FEDERAL DE ELECTRICIDAD, MEXICO	8	RADIAL GATE CYLINDER Ø 550/280 x 19000 mm
			2	POWER INTAKE GATE CYLINDER Ø 540/190 x 8950 mm
CHILE	COLBUN CM21 DAM	MCE VOEST ALPINE, LINZ FOR EUDESA	2	CYLINDER FOR SLIDE-GATE Ø 400/140 x 4500 mm
			2	CYLINDER FOR SPILLWAY-GATE Ø 460/160 x 2860 mm

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			2	CYLINDER FOR POWER-INTAKE-GATE Ø 520/200 x 14100 mm
			4	CYLINDER FOR BOTTOM-OUTLET-GATE Ø 660/260 x 3900 mm WITH LOCKING DEVICE
BRASIL	MANSO DAM	IMPSA BRASIL	2	CYLINDER FOR SLIDE-GATE Ø 165/56 x 6855 mm
COSTA RICA	CACHI DAM	SULZER HYDRO; MEXICO	4	RADIAL GATE TELESCOPIC CYLINDER Ø 225 + 300 / Ø 140 + 250 x 12000 mm
BRASIL	FUNIL DAM	IMPSA ARGENTINIA	8 12	RADIAL GATE CYLINDER Ø 310/200 x 10340 mm INTAKE GATE CYLINDER Ø 250/100 x 7510 mm