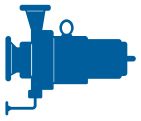
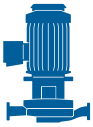
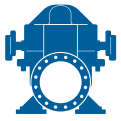
RUHRPUMPEN

Specialist for Pumping Technology

SELECTION GUIDE

Horizontal Pumps

	PRODUCT CATEGORY		RP MODEL	DESCRIPTION	DESIGN STANDARD	Oil & Gas	Power	Industrial	Water	Chemical	Mining	Fire		PAGE
OVERHUNG	Flexibly Coupled	Sealless Magnetic Drive Pumps	**CRP-M**	Sealless process pump with magnetic drive acc. to DIN EN ISO	DIN EN ISO 2858 &15783 HI design (OH11)	■		■		■				4
			SCE-M	Heavy-duty process pump with magnetic drive acc. to API	API 685	■		■		■				5
		Foot Mounted OH1 and General End Suction	**IPP**	End suction pump dimensionally compliant with the ANSI B73.1 standard	HI design (OH1)	■	■	■	■	■	■	■		6
			CPP / CPP-L	Single stage, end suction ANSI process pump (enclosed impeller)	HI design (OH1) ANSI B73.1	■	■	■	■	■	■	■		6
			CPO / CPO-L	Single stage, end suction ANSI process pump (open impeller)	HI design (OH1) ANSI B73.1	■	■	■	■	■	■	■		7
			CRP	Single stage, end suction ISO process pump	HI design (OH1) ISO 2858 & 5199	■	■	■	■	■	■	■		7
			GSD	Single stage, end suction general service pump	HI design (OH0)	■	■	■	■	■	■			8
			SHD / SKO / SKV ST / STV	Single stage, end suction pump (solids handling) in horizontal and vertical configurations	HI design (OH1)			■	■		■			8
			SD / SDV	Single stage, end suction pump in horizontal and vertical installations	HI design (OH3A)		■	■	■		■			9
			SWP	Self-priming pump for solids handling applications	HI design (OH1A)			■	■		■			9
		Centerline Mounted	**SCE**	Horizontal, centerline supported, single stage API process pump	API 610 (OH2)	■	■	■		■				10
	Flexibly Coupled	Vertical In-Line	**SPI**	Vertical in-line process pump (flexibly coupled)	API 610 (OH3)	■								10
	Rigidly Coupled		**IVP**	Vertical in-line pump in split and close coupled configurations	HI design (OH4 / OH5)	■		■	■	■	■	■		11
	Close Coupled		**IIL**	Vertical in-line process pump (close coupled)	HI design (OH5) Dimensionally compliant with ANSI B73.2	■		■	■	■	■	■		11
			SPN	Vertical in-line API process pump (close coupled)	API 610 (OH5)	■								10
		Horizontal	**GSD-C**	Single stage, general service pump (close coupled)	HI design (OH7)	■	■	■	■	■	■			8
BETWEEN BEARING	1 and 2 stage	Axially Split	**HSC / HSD / HSL HSR / ZW**	Horizontal, single stage, split case pumps	HI design (BB1)	■	■	■	■	■	■	■		12
			HSM	Horizontal, multi-stage, split case pump for high pressure applications	HI design (BB3)	■	■	■	■	■	■	■		12
			ZM / ZMS / ZLM ZME	Axially split, single or double stage, API process pumps	API 610 (BB1)	■	■	■	■	■	■			13
		Radially Split	**HVN / J / JS / JD**	Radially split, single stage, process pump	API 610 (BB2)	■								13
			RON / RON-D	Radially split, two stage, process pump	API 610 (BB2)	■								14
	Multi-stage	Axially Split	**SM / SM-I**	Axially split, multi-stage, double volute casing process pump	API 610 (BB3)	■	■	■		■	■			15
			JTN	Axially split, multi-stage, diffuser casing process pump	API 610 (BB3)	■	■	■		■	■			15
		Radially Split Single Casing	**GP**	Radially split, multi-stage, single case, ring-section type process pump	API 610 (BB4)	■	■	■		■	■			16
		Radially Split Double Casing	**A LINE [A, AB, ADC, ADSL]**	Radially split, multi-stage, double case, barrel type process pump	API 610 (BB5)	■		■			■			16

Vertical and Special Service Pumps

	PRODUCT CATEGORY		RP MODEL	DESCRIPTION	DESIGN STANDARD	Oil & Gas	Power	Industrial	Water	Chemical	Mining	Fire		PAGE
VERTICAL	Single Casing	Diffuser	**VTP**	Multi-stage, vertical turbine pumps wiht diffuser type bowl	HI & API 610 (VS1)	●	●	●	●	●	●	●		17
			VCT [HX, KX, MX, RX, SX, TR, VX, VMF, WX]	Single or multi-stage, mixed and radial flow circulating pumps for wet pit applications	HI & API 610 (VS1)	●	●	●	●	●	●	●		17
			HQ	Standard, vertical circulator, multi-stage pump	HI & API 610 (VS1)	●	●	●	●	●	●	●		17
			VLT	Single or multi-stage, vertical turbine pumps wiht diffuser type bowl	HI & API 610 (VS1)	●	●	●	●	●	●	●		19
		Volute	**DSV / DX**	Heavy-duty, double suction, single or multi-stage, centrifugal pump	HI & API 610 (VS2)	●	●	●	●	●	●	●		18
		Discharge through column - Axial flow	**VAF** [POV, PV, PMR, VPO, PVD]	Axial flow impeller for low head applications	HI & API 610 (VS3)	●	●	●	●	●	●	●		18
		Separate discharge line	**VSP / VSP-Chem**	Single casing, sump pumps for wet pit applications	HI & API 610 (VS4)	●	●	●	●	●	●	●		19
	Double Casing	Diffuser	**VLT / VMT**	Single or multi-stage, vertical canned pumps	HI & API 610 (VS6)	●	●	●	●	●	●	●		19
		Volute	**DSV / DX**	Heavy-duty, double suction, single or multi-stage, canned centrifugal design	HI & API 610 (VS7)	●	●	●	●	●	●	●		18
	Submersible Pumps		**SMF** [PVT, PV, SKT, STT, TRT]	Vertical submersible mixed flow pump for installation in a steel tube or concrete well	HI design (OH8A)			●	●		●			20
			VLT-Sub VTP - Sub	Vertical submersible, single or multi-stage, turbine pumps with diffuser type bowl	HI design (VS0)	●			●			●		20
SPECIAL SERVICE	Pitot Tube Pumps		**COMBITUBE**	Single stage, pitot tube pump for low flow, high head applications	HI design	●		●		●	●			21
	Reciprocating Pumps		**RDP**	Reciprocating plunger pumps in triplex and quintuplex formats	API 674 ISO 13710	●	●	●		●	●			21
	Vertical Turbine Generator		**VTG**	Multi-stage, vertical turbine generators (reverse running pumps)	HI design (VS6)	●	●	●		●				22
	Barge		**LS BARGE**	Vertical high flow, self-priming pump	HI design	●		●						22
	Floating Dock Pumps		**ZVZ**	Single stage, double suction, floating dock pump	HI design	Main bilge pump on floating decks								23
			LVZ	Single or multi-stage, single suction, floating dock pump	HI design	Wash-down pumps in floating docks / Fire protection service								23
	Cryogenic Pumps		**SVNV**	OH2 pump in vertical configuration for low temperature	--	Cryogenic closed systems Cryo services: Liquid nitrogen / Liquid oxygen / Hydrocarbons / LNG								23
			VTG Cryogenic	Multi-stage, vertical centrifugal pump and turbine generator for low temperature	--									23
			VLT Cryogenic VLTV	Single or multi-stage, vertical umps for low temperature, cryogenic liquids	--									23
	Pre-packaged Fire Pump Systems		Fire Systems incorporate pumps, drivers, control systems and pipework in a single container. They can be skid mounted, with or without enclosure and supplied with electric motor or diesel engine.		NFPA 20-850 UL and FM approved components	Commercial, municipal and residential high-rise buildings, large industrial premises and storage warehouses, offshore and remote facilities, airports, power stations...								24
	Hydraulic Decoking Systems		The Ruhrpumpen Coke Cutting System includes components like the Heavy-Duty Hoist, the Drill Stem Drive, the Crosshead with Free Fall Arrestor and the Coke Cutting Tool, all combined with our A Line water jet pumps.											26

CRP-M

Sealles process pump with magnetic drive acc. to DIN EN ISO 2858 & 15783

CHARACTERISTICS AND DESIGN FEATURES

- Complies with DIN EN ISO 2858 and 15783
- Pump with permanent magnetic drive, sealless - no mechanical seal required
- Hermetically sealed by containment shell for environment protection
- Horizontal, single stage, end suction, foot mounted, back pull-out design
- Balanced axial thrust over complete operating range up to Qopt.x1,5
- Well-defined pressurized internal flush flow
- Self-cleaning internal and mainstream filter

OPERATING LIMITS

Capacity	up to 2,200 gpm up to 500 m³/h
Head	up to 705 ft up to 215 m
Pressure	up to 232 psi up to 16 bar
Temperature	-184 °F to 840 °F -120 °C to 450 °C

APPLICATIONS

- Chemical and petrochemical
- Tank farms
- Liquid gas industry
- Galvano technique
- Heating and cooling circuits

CRP-M-CC

Sealles pump with magnetic drive acc. to DIN EN ISO 2858 & 15783

CHARACTERISTICS AND DESIGN FEATURES

- Complies with DIN EN ISO 2858 and 15783
- Pump with permanent magnetic drive, sealless - no mechanical seal required
- Driver connection with frame type IM B35, no coupling and align of pump needed
- Lower production, compact design, no roller bearings, less friction and thus less power losses
- Self-cleaning internal and mainstream filter, casing and intermediate housing cooling/heating as optional

OPERATING LIMITS

Capacity	up to 620 gpm up to 140 m³/h
Head	up to 480 ft up to 146 m
Pressure	up to 232 psi at 248 °F up to 16 bar at 120 °C
Temperature	-76 °F to 248 °F -60 °C to 250 °C

APPLICATIONS

- Chemical and petrochemical
- Tank farms
- Liquid gas industry
- Galvano technique
- Heating and cooling circuits

For operation outside operating limits, please contact a Ruhrpumpen representative.

SCE-M

Heavy-duty process pump with magnetic drive acc. to API 685

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 685 latest edition
- Pump with permanent magnetic drive, sealless - no mechanical seal required
- Horizontal, single stage, centerline mounted, back pull-out design
- Hermetically sealled by containment shell for environment protection, secondary control system
- Balanced axial thrust over complete operating range up to Qopt.x1,5
- Well-defined pressurized internal flush flow

OPERATING LIMITS

Capacity	up to 9,690 gpm up to 2,200 m³/h
Head	up to 1,080 ft up to 330 m
Pressure	up to 580 psi up to 40 bar
Temperature	-184 °F to 840 °F -120 °C to 450 °C

APPLICATIONS

- Petrochemical
- Petroleum refining, production and distribution
- Gas industry services
- Heavy-duty chemicals
- Heating and cooling circuits
- Utility services

Oil & Gas Power Industrial Water Chemical Mining Fire

IPP

End suction pump dimensionally compliant with the ANSI B73.1 standard

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH1), dimensionally compliant with the ANSI / ASME B73.1 standard
- Horizontal, overhung, single stage, end suction centrifugal pump
- Fully open impeller, provides hydraulic balance reducing axial thrust
- Back pull-out design for ease of maintenance
- Modular design concept
- Available in a wide range of metallurgies to allow operation with a broad variety of liquids

OPERATING LIMITS

Capacity	up to 1,000 gpm up to 227 m³/h
Head	up to 420 ft up to 128 m
Pressure	up to 375 psi up to 26 bar
Temperature	up to 500 °F up to 260 °C

APPLICATIONS

- Chemical
- Pharmaceutical
- Auxiliary services in power plants
- General industry
- Food processing
- Water and wastewater treatment
- Mining

CPP / CPP-L

Single stage, end suction ANSI process pumps (enclosed impeller)

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH1), compliant with the ANSI / ASME B73.1 specification
- Enhanced hydraulic design for low NPSH requirements
- Back pull-out design for ease of maintenance
- C-Frame option is available
- Optional cooling jacket and cooling coil for high temperature applications
- Available in ductile iron, stainless steel, duplex and alloy 20 (other materials on request)
- Available in 35 sizes to operate within a wide range of hydraulic parameters, including the CPP-L for low-flow, high-head applications

OPERATING LIMITS

Capacity	up to 5,000 gpm up to 1,135 m³/h
Head	up to 770 ft up to 235 m
Pressure	up to 375 psi up to 26 bar
Temperature	up to 700 °F up to 371 °C

APPLICATIONS

- Chemical and petrochemical
- Auxiliary services in power plants
- Agricultural irrigation
- Water treatment
- Food processing
- Pulp and paper
- Textile industry
- Pharmaceuticals
- Tank farms

**For operation outside operating limits, please contact a Ruhrpumpen representative.*

CPO / CPO-L

Single stage, end suction ANSI process pumps (open impeller)

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH1), compliant with the ANSI / ASME B73.1 specification
- Back pull-out design for ease of maintenance
- Open impeller design allows handling of solids in suspension
- Industry leading low NPSHR performance and high efficiencies
- C-Frame option is available
- Optional cooling jacket and cooling coil for high temperature applications
- Available in ductile iron, stainless steel, duplex and alloy 20 (other materials on request)
- CPO-L model for low-flow, high-head applications

OPERATING LIMITS

Capacity	up to 7,000 gpm up to 1,590 m³/h
Head	up to 920 ft up to 281 m
Pressure	up to 400 psi up to 27.5 bar
Temperature	up to 700 °F up to 371 °C

APPLICATIONS

- Chemical and petrochemical
- Auxiliary services in power plants
- Agricultural irrigation
- Water treatment
- Food processing
- Pulp and paper
- Textile industry
- Pharmaceuticals
- Tank farms

CRP

Single stage, end suction ISO process pump

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH1) , fully in compliance with DIN EN ISO 2858 and 5199 specifications
- Back pull-out design for ease of maintenance
- Optimum efficiency in a compact design
- Durable mechanical seal, dual or cartridge seals available
- Available in carbon steel, duplex and stainless steel (other materials on request)
- Features 33 sizes to meet service conditions within a wide range of hydraulic parameters

OPERATING LIMITS

Capacity	up to 2,200 gpm up to 500 m³/h
Head	up to 705 ft up to 215 m
Pressure	up to 360 psi up to 25 bar
Temperature	up to 572 °F up to 300 °C

APPLICATIONS

- Chemical and petrochemical
- Auxiliary services in power plants
- Agricultural irrigation
- Water treatment
- Food processing
- Pulp and paper
- Textile industry
- Pharmaceuticals
- Tank farms

GSD / GSD-C

Single stage, end suction general service pump

CHARACTERISTICS AND DESIGN FEATURES

- HI design (GSD – OH0 / GSD-C – OH7)
- Maximum parts interchangeability to reduce costs
- Available in 28 sizes
- Semi-open, adjustable impeller
- Frame mounted as standard
- Back pull-out construction is available
- Packing or mechanical seal
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 4,000 gpm up to 908 m³/h
Head	up to 400 ft up to 122 m
Pressure	up to 175 psi up to 12 bar
Temperature	up to 250 °F up to 121 °C

APPLICATIONS

Clear liquids or fluids with small solids in suspension:

- Water supply
- Agricultural irrigation
- Construction dewatering
- Recirculation
- HVAC
- Booster service

SHD / ESK / SK / SKO / SKV / ST / STV

Single stage, end suction pumps (solids handling)

CHARACTERISTICS AND DESIGN FEATURES

- End suction, single stage
- Vertical and horizontal mountings available
- Solids handling, non-clog design, hydraulically balanced impeller
- Designed to handle solids from 1 1/2” (38 mm) up to 6” (152 mm) in diameter
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 35,223 gpm up to 8,000 m³/h
Head	up to 380 ft up to 116 m
Pressure	up to 150 psi up to 10 bar
Temperature	up to 176 °F up to 80 °C

APPLICATIONS

- Sewage
- Sanitary and industrial wastes
- Treatment and process wastes
- Storm and rain water
- Pollution control
- Wastewater treatment and management

For operation outside operating limits, please contact a Ruhrpumpen representative.

SD / SDV

Single stage, end suction pumps in horizontal and vertical installations

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH3A)
- Single stage, single suction
- Mixed flow impeller centrifugal pumps
- Semi-axial enclosed impeller
- Anti-friction bearings
- Packing or mechanical seal
- Horizontal and vertical mountings available

OPERATING LIMITS

Capacity	up to 61,700 gpm up to 14,000 m³/h
Head	up to 147 ft up to 45 m
Pressure	up to 64 psi up to 4.4 bar
Temperature	up to 104 °F up to 40 °C

APPLICATIONS

- Cooling water
- Raw water
- Potable water
- Rain water
- Seawater

SWP

Self-priming pump for solids handling applications

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH1A)
- Self-priming process pump
- Handles solids up to 3” (76 mm) in diameter
- Removable cover plate allows for easy access to impeller and seal to facilitate maintenance
- Availability of mounting above the liquid being pumped
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 6,500 gpm up to 1,476 m³/h
Head	up to 140 ft up to 42 m
Pressure	up to 83 psi up to 5.6 bar
Temperature	up to 158 °F up to 70 °C

APPLICATIONS

Waste handling and sewage applications, it can handle clear liquids or with solids:

- Paper mills
- Food processing
- Wineries
- Steel industry
- Wastewater treatment
- Mine dewatering and groundwater control

Oil & Gas | Power | Industrial | Water | Chemical | Mining | Fire

SCE

Horizontal, centerline mounted, single stage process pump

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (OH2)
- Single or double volute depending on size
- Single suction, enclosed impeller
- Designed for continuous duty with over 130 hydraulic combinations available
- Back pull-out design for ease of maintenance
- SCE-L for low flow applications available
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 14,000 gpm up to 3,200 m³/h
Head	up to 1,575 ft up to 480 m
Pressure	up to 1,300 psi up to 90 bar
Temperature	-110 °F to 850 °F -80 °C to 450 °C

APPLICATIONS

- Petroleum refining, production and distribution
- Petrochemical
- Hydrocarbon processing
- Gas industry services
- Heavy-duty chemical
- Hot oil service
- Industrial wastes

SPI / SPN

Vertical in-line process pumps (flexibly and close coupled)

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition
  - SPI – OH3 / SPN – OH5
- Single and double volute casings (depending on size)
- Single suction, dynamically balanced enclosed impeller
- Top pull-out design for ease of maintenance
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	11 to 2,700 gpm 2.5 to 615 m³/h
Head	52 to 950 ft 15 to 290 m
Pressure	up to 595 psi up to 41 bar
Temperature	up to 500° F up to 260° C

APPLICATIONS

- Petroleum refining, production and distribution
- Pipeline
- Petrochemical

For operation outside operating limits, please contact a Ruhrpumpen representative.

IVP / IVP-CC

Vertical in-line pump in split and close coupled configurations

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH4 / OH5)
- Fully enclosed, balanced, one-piece impeller design
- Split coupling simplifies maintenance (IVP-CC close coupled available)
- Top pull-out design for ease of maintenance
- Flanged suction and discharge on common centerline
- Coupling guard for protection during operation
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 10,000 gpm up to 2,271 m³/h
Head	up to 400 ft up to 122 m
Pressure	up to 275 psi up to 19 bar
Temperature	-50 °F to 300 °F -45 °C to 150 °C

APPLICATIONS

- Chemical and petrochemical
- Pharmaceutical fats and oils
- Pulp and paper
- Food processing
- Beverage industry
- Utility services
- Water supply systems
- Fire protection

IIL

Vertical in-line process pump (close coupled)

CHARACTERISTICS AND DESIGN FEATURES

- HI design (OH5), dimensionally compliant with the ANSI / ASME B73.2 standard
- Space saving design allows for use in thight installations or modular packages and top pull-out design to simplify maintenance
- Protected one-piece shaft
- Flanged suction and discharge on common centerline
- Fully enclosed balanced impeller
- Ductile iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 1,300 gpm up to 295 m³/h
Head	up to 340 ft up to 119 m
Pressure	up to 350 psi up to 24 bar
Temperature	up to 350 °F up to 177 °C

APPLICATIONS

- Chemical and petrochemical
- Pharmaceutical
- Water treatment
- Pulp and paper
- Food processing
- Beverage industry
- HVAC
- General process
- Fire protection

Oil & Gas | Power | Industrial | Water | Chemical | Mining | Fire

HSC / HSD / HSL / HSR / ZW

*See ZM line for API build

Horizontal, single stage, axially split case pumps

CHARACTERISTICS AND DESIGN FEATURES

- HI design (BB1)
- High efficiency, foot mounted design
- Double suction, dynamically balanced enclosed impeller
- Mechanical or packing seal
- All HS/ZW pumps can be mounted vertically or horizontally
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

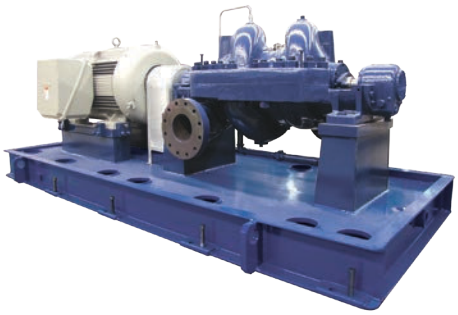
Capacity	up to 140,000 gpm up to 31,800 m³/h
Head	up to 2,210 ft up to 673 m
Pressure	up to 298 psi up to 20 bar
Temperature	50 °F to 300 °F 10 °C to 150 °C

APPLICATIONS

- Pipeline
- Sugar industry
- Pulp and paper
- HVAC
- Cooling towers
- Dewatering
- Municipal water systems
- Fire protection

HSM

Horizontal, multi-stage, split case pump for high pressure applications



CHARACTERISTICS AND DESIGN FEATURES

- HI design (BB3)
- Two or four stage pump with double volute casing and side-side nozzle arrangement
- Double suction, dynamically balanced enclosed impeller
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 2,000 gpm up to 454 m³/h
Head	up to 2,200 ft up to 670 m
Pressure	up to 740 psi up to 51 bar
Temperature	up to 250 °F up to 121 °C

APPLICATIONS

- Chemical and petrochemical
- Cooling towers
- Municipal water systems
- Water pipelines
- Fire protection

*For operation outside operating limits, please contact a Ruhrpumpen representative.

ZM / ZMS / ZLM / ZME

Axially split, single or double stage, process pumps

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (BB1)
- Foot or near-centerline mounted
- Double volute and diffuser casings
- Double suction, enclosed impeller provides hydraulic balance eliminating axial thrust
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	660 to 44,000 gpm 150 to 10,000 m³/h
Head	50 to 1,300 ft 16 to 400 m
Pressure	up to 580 psi up to 40 bar
Temperature	14 °F to 428 °F -10 °C to 220 °C

APPLICATIONS

- Pipeline (mainline and booster)
- Oil extraction (land and offshore)
- Refining
- Tank farms
- Petrochemical

HVN / J / JS / JD

Radially split, single stage process pumps

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (BB2)
- Single stage, centerline mounted
- Double volute, centerline mounted casing
- Top-top nozzle arrangement, other arrangements on request
- Double suction, dynamically balanced enclosed impeller
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 30,000 gpm up to 6,814 m³/h
Head	up to 2,000 ft up to 610 m
Pressure	up to 1,813 psi up to 125 bar
Temperature	up to 850 °F up to 450 °C

APPLICATIONS

- Oil fields
- Refining
- Chemical and petrochemical
- Heavy-duty, high-temperature processes: charge, transfer, injection and utility booster

RON / RON-D

Radially split, two stage, heavy-duty process pump

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (BB2)
- Centerline mounted, diffuser/volute combined casing
- Single suction opposed impeller arrangement (RON model)
- Double suction first stage impeller (RON-D)
- Ease of maintenance due to the radial split pull-out design
- Low vibration operation due to dynamic balancing
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 6,164 gpm up to 1,400 m³/h
Head	up to 2,297 ft up to 700 m
Pressure	up to 1,305 psi up to 90 bar
Temperature	up to 842 °F up to 450 °C

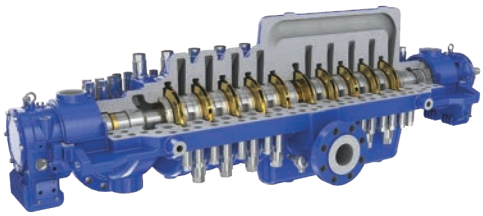
APPLICATIONS

- Refining
- Oil fields
- Chemical and petrochemical

*For operation outside operating limits, please contact a Ruhrpumpen representative.

SM / SM-I

Axially split, multi-stage, double volute casing process pump



CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (BB3)
- Designed for a minimum service life of 20 years and at least 3 years of uninterrupted operation
- Volute design allows direct access to the rotor providing ease of inspection and maintenance
- Double row bolting for upper and lower part of high pressure design (SM)
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 8,806 gpm up to 2,000 m³/h
Head	up to 5,249 ft up to 1,600 m
Pressure	up to 4,000 psi up to 276 bar
Temperature	up to 392 °F up to 200 °C

APPLICATIONS

- Oil fields and terminals
- Crude oil pipeline
- Boiler feed
- Descaling
- Fluid injection
- Water pipelines
- Reverse osmosis
- Mine dewatering

JTN

Axially split, multi-stage, diffuser casing process pump

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (BB3)
- Axially split design enables easy access to pump internals for removal and maintenance
- Anti-friction bearings as standard (other bearing designs are available)
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 1,321 gpm up to 300 m³/h
Head	up to 2,625 ft up to 800 m
Pressure	up to 1,880 psi up to 130 bar
Temperature	up to 92 °F up to 200 °C

APPLICATIONS

- Oil fields
- Pipeline
- Refining
- Chemical and petrochemical
- Power plants

GP

Radially split, multi-stage, single case, ring-section type process pump

CHARACTERISTICS AND DESIGN FEATURES

- Non-API and API 610 latest edition (BB4) constructions available
- Modular design for various number of stages
- “Blind” stages for future upgrades available
- Low NPSH first stage design is available
- Single or double mechanical seals

OPERATING LIMITS

Capacity	up to 4,000 gpm up to 900 m³/hr
Head	up to 13,120 ft up to 4,000 m
Pressure	up to 6,000 psi up to 416 bar
Temperature	up to 400 °F up to 205 °C

APPLICATIONS

High-pressure and high-temperature applications across industries:

- Refining
- Hydraulic decoking
- Boiler feed water
- Water injection
- Desalination
- Reverse osmosis

A LINE [A, AB, ADC, ADSL]

Radially split, multi-stage, double case, barrel type process pumps

CHARACTERISTICS AND DESIGN FEATURES

- Heavy-duty process design according to API 610 latest edition (BB5)
- In-line or back-to-back impeller arrangements
- “Blind” stages for future upgrades available
- Ring oil lubrication, other methods available
- Standard or cartridge full-pull-out designs available
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 6,160 gpm up to 1,400 m³/h
Head	up to 13,776 ft up to 4,200 m
Pressure	up to 7,830 psi up to 450 bar
Temperature	up to 840 °F up to 450 °C

APPLICATIONS

High-pressure applications:

- Amine / ethylene feed
- Hydrocarbon charge
- Pipeline
- Decoking jet service (ADC)
- Cogeneration
- Boiler feed
- Descaling

For operation outside operating limits, please contact a Ruhrpumpen representative.

VTP / HQ

Multi-stage, vertical turbine pump with diffuser type bowl

CHARACTERISTICS AND DESIGN FEATURES

- HI design and API 610 latest edition (VS1) constructions available
- Collet mounted or ring and key, semi-open and enclosed impellers
- Threaded or flanged bowls are provided depending on pump size
- Up to 30 stages, number of stages according to requirement
- Basket or conical strainer available according to requirement
- Can be built as a vertical canned pump (VS6)
- Standard materials include cast iron bowls, bronze impellers and 416 SS shafting (other materials on request)

OPERATING LIMITS

Capacity	up to 60,000 gpm up to 13,630 m³/h
Head	up to 2,500 ft up to 762 m
Pressure	up to 1,080 psi up to 74 bar
Temperature	up to 250 °F up to 121 °C

APPLICATIONS

- Hydrocarbon service
- Offshore facilities
- Deep well irrigation and dewatering
- Condensate extraction
- Municipal water systems
- Fire protection

VCT [HX, KX, MX, RX, SX, TR, VX, VMF, WX]

Single or multi-stage, mixed and radial flow circulating pumps

CHARACTERISTICS AND DESIGN FEATURES

- HI design and API 610 latest edition (VS1) constructions available
- Open, semi-open and enclosed impellers available according to pump model
- Packing as standard, mechanical seal is available
- Above or below ground discharge
- Optional pull-out design for ease of maintenance (for some large models)
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	up to 300,000 gpm up to 68,137 m³/h
Head	up to 330 ft up to 100 m
Pressure	up to 285 psi up to 20 bar
Temperature	-20 °F to 275 °F -30 °C to 135 °C

APPLICATIONS

- Offshore facilities
- Pipeline
- Refining
- Storm and flood water disposal
- Water transportation, distribution and treatment
- Condensate service
- Cooling water service

DSV / DX

Heavy-duty, double suction, single or multi-stage centrifugal pump

CHARACTERISTICS AND DESIGN FEATURES

- HI design and API 610 latest edition (VS2 & VS7) constructions available
- Twin volute (DSV) or four volute (DX) cases designed to efficiently convert to pressure the velocity added to the liquid by the double suction, enclosed impeller
- Its good NPSH characteristics make these pumps ideal for open sumps, channels, lakes and rivers
- Packed stuffing box or mechanical seal / Above or below base discharge
- Can be built as vertical canned pump (VS7)

OPERATING LIMITS

Capacity	1,500 to 80,000 gpm 340 to 18,170 m³/h
Head	40 to 800 ft 12 to 244 m
Pressure	up to 280 psi up to 19 bar
Temperature	up to 302 °F up to 150 °C

APPLICATIONS

Large volumes of liquid with relatively high head:

- Cooling water
- Raw water intake
- Pipeline booster pump
- Condensate service

VAF [PMR, POV, PV, PVD, VPO]

Axial flow impeller for low head applications

CHARACTERISTICS AND DESIGN FEATURES

- HI design and API 610 latest edition (VS3) constructions available
- Axial flow impeller
- Can handle solids up to 14” (365 mm)
- Standard materials include cast iron for bowls, bronze for impellers, stainless steel for pump shaft (other materials on request)

OPERATING LIMITS

Capacity	up to 320,000 gpm up 72,700 m³/h
Head	up to 90 ft up to 28 m
Pressure	up to 75 psi up to 5.2 bar
Temperature	up to 203 °F up to 95 °C

APPLICATIONS

Applications that require large quantities of water with low head:

- Drainage
- Wastewater
- Flood control
- Water irrigation
- Construction dewatering
- Raw water intake
- Condenser cooling

For operation outside operating limits, please contact a Ruhrpumpen representative.

VSP / VSP-CHEM

Single casing, sump pumps for wet pit applications

CHARACTERISTICS AND DESIGN FEATURES

- HI design and API 610 latest edition (VS4) constructions available
- Semi-open impeller for clean water applications and enclosed impeller for solids handling (non-clog model)
- Can handle water with solids up to 4" (102 mm) in diameter (non-clog)
- Sump mount or tank mount available
- Sump depth up to 20 ft (6 m)
- Cast iron as standard material for the VSP model (other materials on request) for the VSP-Chem materials are according to API 610

OPERATING LIMITS

Capacity	up to 8,500 gpm up to 1,931 m³/h
Head	up to 425 ft up to 130 m
Pressure	up to 580 psi up to 40 bar
Temperature	up to 400 °F up to 200 °C

APPLICATIONS

- Hydrocarbon processing
- Condensation control
- Automotive solvents
- Sump drainage
- Flood control
- Water treatment
- Dewatering service
- Utility service
- Open or closed drain service

VLT / VMT

Single or multi-stage, vertical canned pumps

CHARACTERISTICS AND DESIGN FEATURES

- HI design, cryogenic and API 610 latest edition (VS6) constructions available
- Low NPSH "shockless entry" first stage impeller
- Integral fabricated column support bearings
- One-piece shaft construction for shaft lengths up to 6 m (20 ft)
- Materials of construction per API 610 (other materials on request)

OPERATING LIMITS

Capacity	up to 45,000 gpm up to 9,500 m³/h
Head	up to 4,900 ft up to 1,494 m
Pressure	up to 2,020 psi up to 140 bar
Temperature	up to 1,500 °F up to 815 °C

APPLICATIONS

- Hydrocarbon processing
- Pipeline
- Refining
- Condensate
- Municipal water systems
- Molten salt applications

Oil & Gas | Power | Industrial | Water | Chemical | Mining | Fire

SMF [PVT, PV, SKT, STT, TRT]

Vertical submersible mixed flow pumps

CHARACTERISTICS AND DESIGN FEATURES

- Single stage, single suction
- For installation in a steel tube or concrete well
- Interchangeable semi-open impeller thanks to modular design
- Self-cooled, submersible induction motor
- Double mechanical seal
- Large solid handling
- Provided with submersible cable
- Cast iron as standard material (other materials on request)

OPERATING LIMITS

Capacity	1,320 to 79,344 gpm 300 to 18,000 m³/h
Head	6 to 165 ft 2 to 50 m
Pressure	up to 99 psi up to 7 bar
Temperature	up to 104 °F up to 40 °C

APPLICATIONS

Commercial and industrial water processing applications:

- Agricultural irrigation
- Drainage
- Cooling water circuits
- Industrial water supply
- Water lifting
- Municipal water systems

VLT-SUB / VTP-SUB

Vertical submersible, single or multi-stage, turbine pumps

CHARACTERISTICS AND DESIGN FEATURES

- HI design (VS0)
- NEMA design motors
- Casting adapter for accurate alignment of pump and motor
- Enclosed impellers, dynamically balanced for smooth operation
- Stainless steel strainer prevents debris from entering the pump
- Materials on request

OPERATING LIMITS

Capacity	up to 60,000 gpm up to 13,363 m³/h
Head	up to 2,500 ft up to 762 m
Pressure	up to 1,080 psi up to 74 bar
Temperature	up to 250 °F up to 121 °C

APPLICATIONS

- Water supply and transfer
- Irrigation systems
- Offshore platforms
- Deep well dewatering
- Fire protection

For operation outside operating limits, please contact a Ruhrpumpen representative.

COMBITUBE

Single stage, pitot tube pump for low flow, high head applications

CHARACTERISTICS AND DESIGN FEATURES

- HI design
- Heavy-duty mechanical construction with no impeller design
- Modular construction, designed to maximize interchangeability
- Single or double mechanical seal for shaft sealing
- Oil and grease lubricated models
- No contact between the pumped medium and pump lubricant
- Complies with ATEX legislation

OPERATING LIMITS

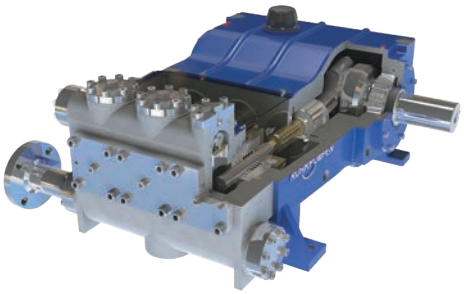
Capacity	up to 352 gpm up to 80 m³/h
Head	up to 4,856 ft up to 1,480 m
Pressure	up to 2,320 psi up to 160 bar
Temperature	up to 390 °F up to 200 °C

APPLICATIONS

- Oil extraction and processing
- Reactor feed
- Boiler feed
- Condensate injection
- High-pressure cleaning
- Descaling
- Desuperheating

RDP

Reciprocating plunger pumps in triplex and quintuplex formats



CHARACTERISTICS AND DESIGN FEATURES

- Designed in accordance with API 674 3rd edition and ISO 13710
- Variety of sizes in triplex and quintuplex formats
- Easily accessible service points reducing maintenance time
- Robust design for low noise and vibrational characteristics
- Materials include crankcase in ductile iron and wide range of alloys for wetted parts

OPERATING LIMITS

Capacity	up to 1,611 gpm up to 366.5 m³/h
Discharge Pressure	up to 14,500 psi up to 1,000 bar
Temperature	-104 °F to 392 °F -40 °C to 200 °C
Max Pump Speed	450 rpm

APPLICATIONS

- Polymer and methanol injection
- WAG charge
- Glycol circulation
- Seawater injection
- Hydrocarbon condensate
- Descaling
- Pipeline pigging
- Ammonia and carbamate solutions

VTG

Multi-stage, vertical turbine generator (reverse running pump)

CHARACTERISTICS AND DESIGN FEATURES

- HI design (VS6)
- Open and enclosed impeller designs available
- Pump or turbine usage applications, different types of turbines for different operation conditions
- Semi-open runners are axially adjustable from the operating floor level
- Available for sump or closed system applications
- Discharge may be open into a sump, or into a barrel in a closed system
- Lower overall cost as the pump and the electric generator are the same

OPERATING LIMITS

Capacity	up to 29,174 gpm up to 6,626 m³/h
Head	up to 3,500 ft up to 1,067 m
Pressure	up to 105 bar up to 1,523 psi
Temperature	-300 °F to 250 °F -185 °C to 121 °C

APPLICATIONS

- Chemical and petrochemical
- Oil supply systems
- Small hydroelectric needs
- Water transportation systems
- Cryogenic closed systems *(see VTG Cryo)*

LS BARGE

Vertical high flow, self-priming pump

CHARACTERISTICS AND DESIGN FEATURES

- HI design
- Primary self-priming first stage impeller
- Capable of handling air and product for efficient stripping
- Vertical installation requires minimal space
- No need for auxiliary vacuum pump to maintain prime
- Pollution prevention design system to minimize costly product spills or leakage
- Broad range of metallurgies available for special applications

OPERATING LIMITS

Capacity	800 to 5,000 gpm 182 to 1,136 m³/h
Head	40 to 350 ft 12 to 107 m
Temperature	up to 164 °F up to 74 °C

APPLICATIONS

Barge unloading and transfer operations:

- Gasoline
- Fuel
- Crude oil
- Seawater
- Dewatering

For operation outside operating limits, please contact a Ruhrpumpen representative.

ZVZ

Single stage, double suction, floating dock pump

CHARACTERISTICS AND DESIGN FEATURES

- HI design
- Radially split, vertical foot mounted centrifugal pump
- Volute casing
- Double suction, radial, enclosed impeller
- Side-side nozzle arrangement
- Cast iron and bronze as standard materials (other materials on request)

OPERATING LIMITS

Capacity	750 to 33,000 gpm 170 to 7,500 m³/h
Head	10 to 66 ft 3 to 20 m

APPLICATIONS

- Main bilge pump on floating docks

LVZ

Single or multi-stage, single suction floating dock pump

CHARACTERISTICS AND DESIGN FEATURES

- HI design
- Radially split, single or multi-stage, centrifugal pump
- Single suction segmental casing
- Anti-friction bearings in the motor stool
- Shaft sealing by means of soft packing
- Cast iron and bronze as standard materials (other materials on request)

OPERATING LIMITS

Capacity	88 to 1,585 gpm 20 to 360 m³/h
Head	82 to 525 ft 25 to 160 m

APPLICATIONS

- Wash-down pumps in floating docks
- Fire protection pump

CRYOGENIC PUMPS [SVNV, VTG CRYO, VLT CRYO]

VTG Cryo

CHARACTERISTICS AND DESIGN FEATURES

- Vertical construction designed for mounting on a warm box or an insulated cold box
- Reliable and proven sealing system
- Special first stage impeller with low NPSH requirement characteristics to keep pump length to a minimum
- For both stand-by and continuous service
- Various material combinations available for low temperatures
  - **SVNV:** centerline mounted OH2 pump in vertical configuration
  - **VTG Cryo:** multi-stage centrifugal pump and turbine generator
  - **VLT Cryo:** single or multi-stage, turbine pump with diffuser type bowl

OPERATING LIMITS

Capacity	10 to 13,200 gpm 3 to 3,000 m³/h
Head	26 to 3,780 ft 6 to 1,152 m
Pressure	up to 2,105 psi up to 145 bar
Temperature	-320 °F -196 °C

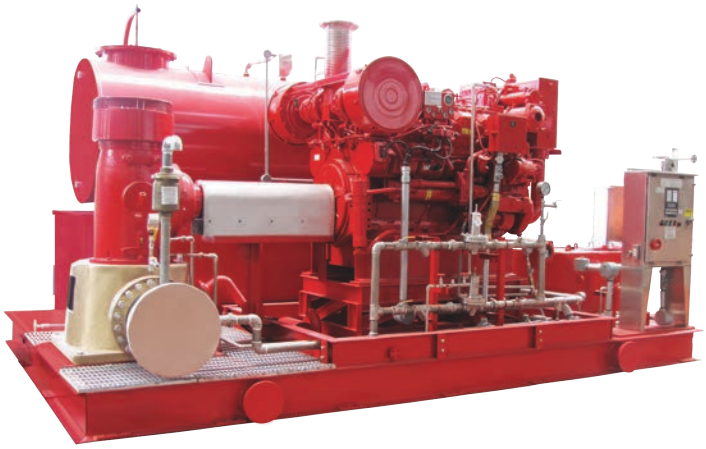
APPLICATIONS

Cryogenic closed systems and cryo services:

- Liquid nitrogen
- Liquid oxygen
- Hydrocarbons
- LNG

FIRE PUMPS AND SYSTEMS

Our fire protection pumping solutions can be found all around the world in a variety of industrial, commercial and residential applications. We are able to supply single pumping units or complete pre-packaged fire systems (with or without enclosure), always tailored and built to the requirements of the customer, ensuring that they meet international and local safety regulations.



CHARACTERISTICS

All pre-packaged systems accomodate any of the RP fire pump models with drivers, control systems and pipework on a common base for a plug-and-play-installation.

- Available with electric motor or diesel engine
- ETL/C-ETL third party listing components
- UL listed and FM approved components
- NFPA 20 full compliance
- NFPA 850 compliant
- Wide range of construction materials available. Metallurgies available for sea/brackish water application and harsh environments.

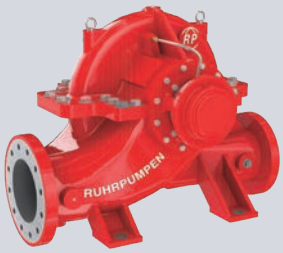
BENEFITS

- Single source responsibility for complete system
- System is completely wired and factory tested
- Delivered on site in a single shipment, ready for installation
- Engineered to customer requirements
- International distribution and start-up capabilities
- ABS certification for offshore platform fire pump packages and fire skid units

APPLICATIONS

- Commercial, municipal and residential high-rise buildings
- Large industrial premises and storage warehouses
- Offshore and remote facilities
- Airports
- Commercial centers
- Power stations
- Marine

Ruhrpumpen fire pumps: the heart of your fire protection system



Split case fire pumps

Horizontal, single and two stage, split case centrifugal pumps

Characteristics

- Flows from 150 to 5000 GPM
- Pressures from 40 to 355 + PSI
- Electric or Diesel driven
- UL-448 listed
- FM-1311 approved
- NFPA-20 design
- Factory tested

Benefits

- Ease of installation and maintenance
- Wide range of applications
- Construction materials for seawater service are available

End suction fire pumps

Horizontal, single stage, end suction centrifugal pumps

Characteristics

- Flows from 150 to 400 GPM
- Pressures from 40 to 250 + PSI
- Electric or Diesel driven
- UL-448 listed
- FM-1319 approved
- NFPA-20 design
- Factory tested

Benefits

- Back pull-out design simplifies maintenance and reduces problems associated with pipe strain

Vertical turbine fire pump

Vertical, single and multi-stage, turbine pumps

Characteristics

- Flows from 250 to 5000 GPM
- Pressures from 40 to 519 + PSI
- No priming
- Adaptability to water level
- Electric or Diesel driven
- UL-448 listed
- FM-1312 approved
- NFPA-20 design
- Factory tested

Benefits

- UL listed and FM approved pump for suction lift conditions
- Minimal maintenance
- Can be used where city water is not available and ponds or lakes are the only water supply
- Construction materials for seawater service are available

In-line fire pump

Vertical in-line centrifugal pumps

Characteristics

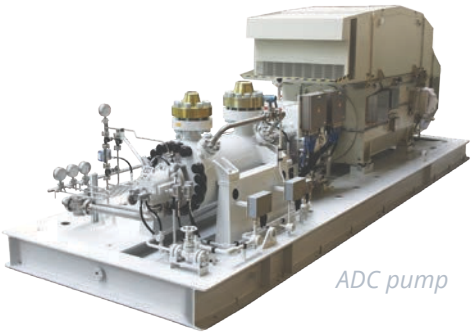
- Flows from 150 to 1000 GPM
- Only available with electric drive
- Pending UL Listing and FM Approval
- NFPA-20 design
- Factory tested

Benefits

- Top pull-out design simplifies maintenance
- Compact, space-saving design

HYDRAULIC DECOKING SYSTEMS

Ruhrpumpen's Coke Cutting System includes components like the Heavy-Duty Hoist, the Drill Stem Drive, the Crosshead with Free Fall Arrestor and the Coke Cutting Tool, all combined with our Decoking Jet Water Pumps.



ADC pump

JET WATER PUMP

- ADC barrel type process pump from our A Line pump range
- Heavy-duty process design according to API 610 latest edition (BB5), special modifications according to individual working conditions
- For high pressure cutting water

OPERATING LIMITS

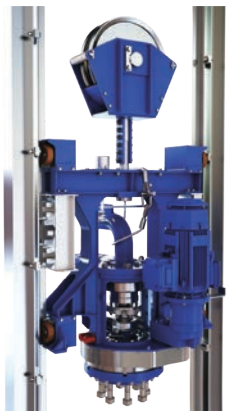
Capacity	up to 1,761 gpm up to 400 m³/h
Differential Head	up to 11,811 ft up to 3,600 m
Cutting Pressure	up to 5,076 psi up to 350 bar
Temperature	std 149 °F (up to 203 °F) std 65 °C (up to 95 °C)

**For operation outside this range, please contact a Ruhrpumpen representative.*

Coke Cutting Tool

COKE CUTTING TOOL

- RP's Coke Drilling / Cutting Tool is a patented design that offers significant advantages in operation and safety for Delayed Coking processes in refineries.
- Slim tool, diameter of 310 mm (13")
- Designed for minimum torque
- Requires minimal lift force due to its reduced cross-sectional area
- Hydrodynamically optimized channels
- Available in Manual and AutoSwitch designs



Crosshead

CROSSHEAD WITH FREE FALL ARRESTOR

- RP's propietary Free-Fall Arrestor retrofit designs reduce safety risks
- The standard crosshead design is an efficient component of a cutting system for heavy-duty tasks in refineries
- Can usually be installed without interruption to existing decoker operations
- Regular operational testing performed on a routine basis
- Arrestor cables and guides are eliminated
- Cable grippers are eliminated
- TÜV approved, proven in over 5,000 installations

Drill Stem Drive

DRILL STEM DRIVE

- Robust design with efficient operational features for Coke Cutting Systems
- Can normally be installed without interruption to decoking operations
- Fits within the existing swivel envelope
- Can be adapted to existing crossheads without modification to control limit switches or mechanical stops
- Can easily revise existing connection to the drill stem from a univolt coupling to a FlangeLok® or equivalent flanged connection
- Available as electric, hydraulic or pneumatic driven unit
- Max Torque: 7,500 Nm (5,500 lb ft)
- Max Bearing Load: 65,000 kg (143,000 lbs) @ 15 rpm
- Max Operating Pressure: 420 bar (6,090 psi)

Heavy-Duty Hoist

HEAVY-DUTY HOIST

- Specially designed hoists for decoking services
- Max pull force hoist 48 kN (10,600 lb/f) at all layers
- Max pull speed hoist 72 m/min (236 ft/min)
- Can be provided with electric, hydraulic and pneumatic drives according to heavy-duty standards and RP's specifications
- Pull force and pull speed are defined to actual requirements to provide a trouble-free operation in conjuction with other Decoking components

+65 years creating the pumping technology that moves our world

Ruhrpumpen is an innovative and efficient pump technology company that offers highly-engineered and standard pumping solutions for the oil & gas, power generation, industrial, water and chemical markets. We offer a broad range of centrifugal and reciprocating pumps that meet and exceed the requirements of the most demanding quality specifications and industry standards such as API, ANSI, UL, FM, ISO and Hydraulic Institute.

Ruhrpumpen Plants

- ARGENTINA, Buenos Aires
- BRAZIL, Rio de Janeiro
- CHINA, Changzhou
- EGYPT, Suez
- GERMANY, Witten
- INDIA, Chennai
- MEXICO, Monterrey
- RUSSIA, Moscow
- UK, Lancing
- USA, Tulsa