PT. LUGATA KARYA TEKNIK
Authorised Distributor for:

PRINZ®
PUMPS MANUFACTURING COMPANY

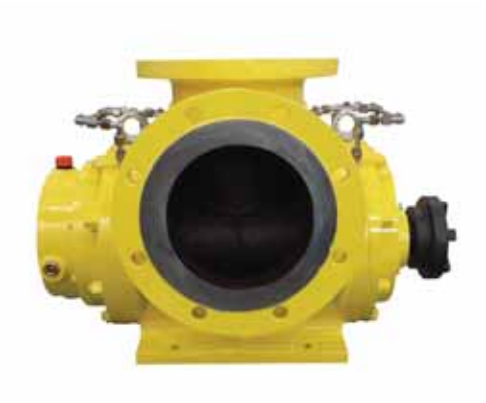
POSITIVE DISPLACEMENT PUMPS

FOR OIL&GAS AND MARINE APPLICATIONS

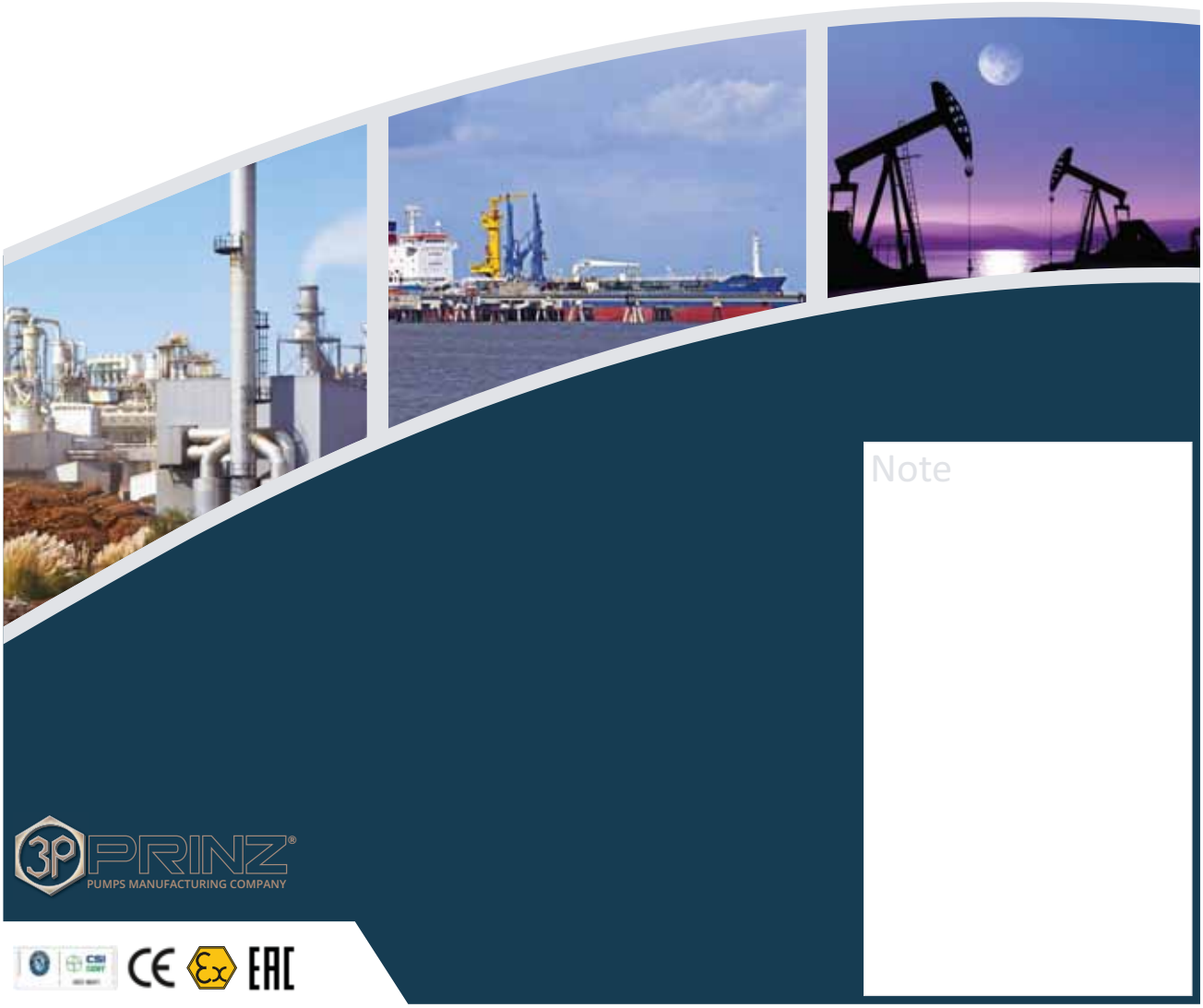
Technical Specification

since 1952

index



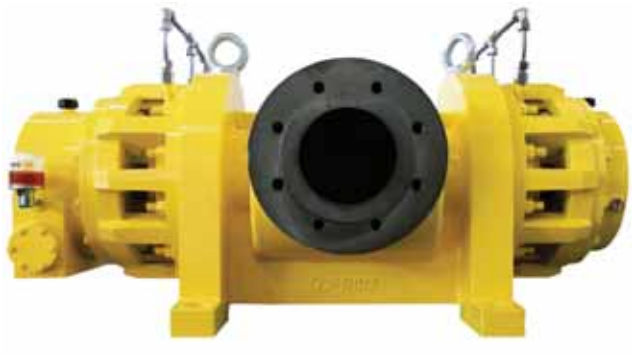
HR - HRV
Series



Note

PRINZ
PUMPS MANUFACTURING COMPANY

PUMP TYPE	TWIN SCREW PUMPS – EXTERNAL TIMING GEARS		
Pump Series	**HR Series:**		**HRV Series :**
Installation Options:	**Horizontal**		**Vertical**
Executions:	High Capacity		
	Standard & API 676 with deviations - Timing Gears - External Gears and Bearings		
Optimized for Applications in:	**Oil&Gas Downstream, Petrochemical, Chemical, Marine & Shipbuilding, General Industry**		
Suitable to Fluid having the following properties:	Abrasive and not Abrasive		
	Corrosive (Alkaline / Acid / Aggressive) and not Corrosive		
	Low / Medium / High / Very High Viscosities		
	Not Lubricating or Lubricating		
	Medium / High percentage of Gas or Air dissolved in Liquid		
	Slightly Dirty (small soft particles)		
Advantages of the Operating Principle:	Capability of handling a Wide Range of viscosities and pressures = one pump for many types of fluids and many flow rates!		
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.		
	Self Priming without any auxiliary devices.		
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.		
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.		
	High Rotating Speeds are possible thanks to the low inertia of the screws.		
	Screws are contact-less so wear-out is minimized and Pump Life is extended.		
	Flow rate is constant even when pressure changes.		
	Reversible at Low Speeds / Pressure.		
	Capability of Dry Running for a limited period and in particular conditions.		
	Low noise level & Low vibration.		
Pump Series	**HR Series:**		
Maximum design pressure:	14 bar (standard) [204 psig]		
Flow rates:	up to 3500 m3/h [15400 GPM]		
Viscosity of the pumped fluid:	up to 35.000 cSt		
Pipe Nominal Size DN:	from 50 to 750 [from 2" up to 30"]		
Rotation speed:	from 200 up to 2200 rpm		
Temperature range:	-46 / +300 °C [-51 / +572 °F] **- ON REQUEST -60°C**		
Pulsations:	Minimized (almost zero)		
Bearing types:	External Bearings and Gears in oil bath / grease		
Standard Materials:	Casing / Liner	Screws	Shafts
	Cast Iron, Ductile Cast Iron	Ductile Cast Iron	High Strenght Low Alloy Steel
	Carbon Steel (Cast or Fabricated)	High Strenght Low Alloy Steel	Stainless Steel AISI 420
	Low Temperature Carbon Steel (Cast or Fabricated)	Stainless Steel AISI 420	Stainless Steel 17-4 PH
	12% Cr Stainless Steel	Stainless Steel AISI S316/S316L	Stainless Steel XM-19
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel 17-4 PH or AISI 431	Duplex & Super Duplex St. Steel
	Bronze, Nickel Aluminium Bronze	Duplex & Super Duplex St. Steel	HVOF Spray Coating /Tungsten Carbide Coating
		HVOF Spray Coating /Tungsten Carbide Coating	Chromium Plating
		Nitriding	Nitriding
Customized materials:	**Other Alloys and Material Combinations are available on request**		
	NORSOK Compliant Materials are available on request		
Main Application Fields:	**HR / HRV Series**		
	OIL & GAS DOWNSTREAM: Tank Storages / Terminals, Oil Pipelines		
	PETROCHEMICAL: Refinery, Petrochemical Complex, Lubricants Plants, Bitumen/Asphalt/Tar Plants		
	CHEMICAL: Resin Production, Paint Production, Green Fuels, Polymeric Suspensions		
	MARINE & SHIPBUILDING: Tankers, Barges, Cargo Ships, Support Vessels, FPSOs, Offshore Platforms Hulls		
	POWER GENERATION: Heavy Fuel Oil Power Plants, Lube Oil Systems		



HD - HDL - HDV
Series

Note

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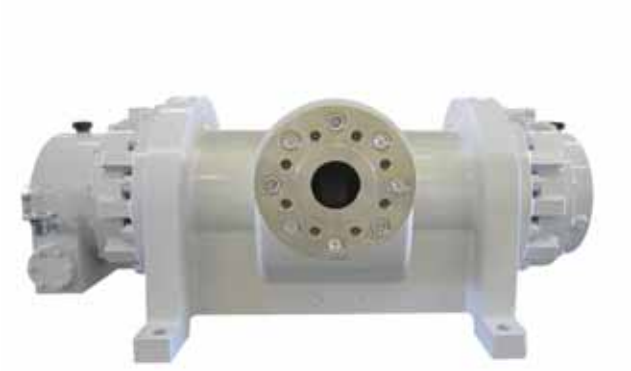
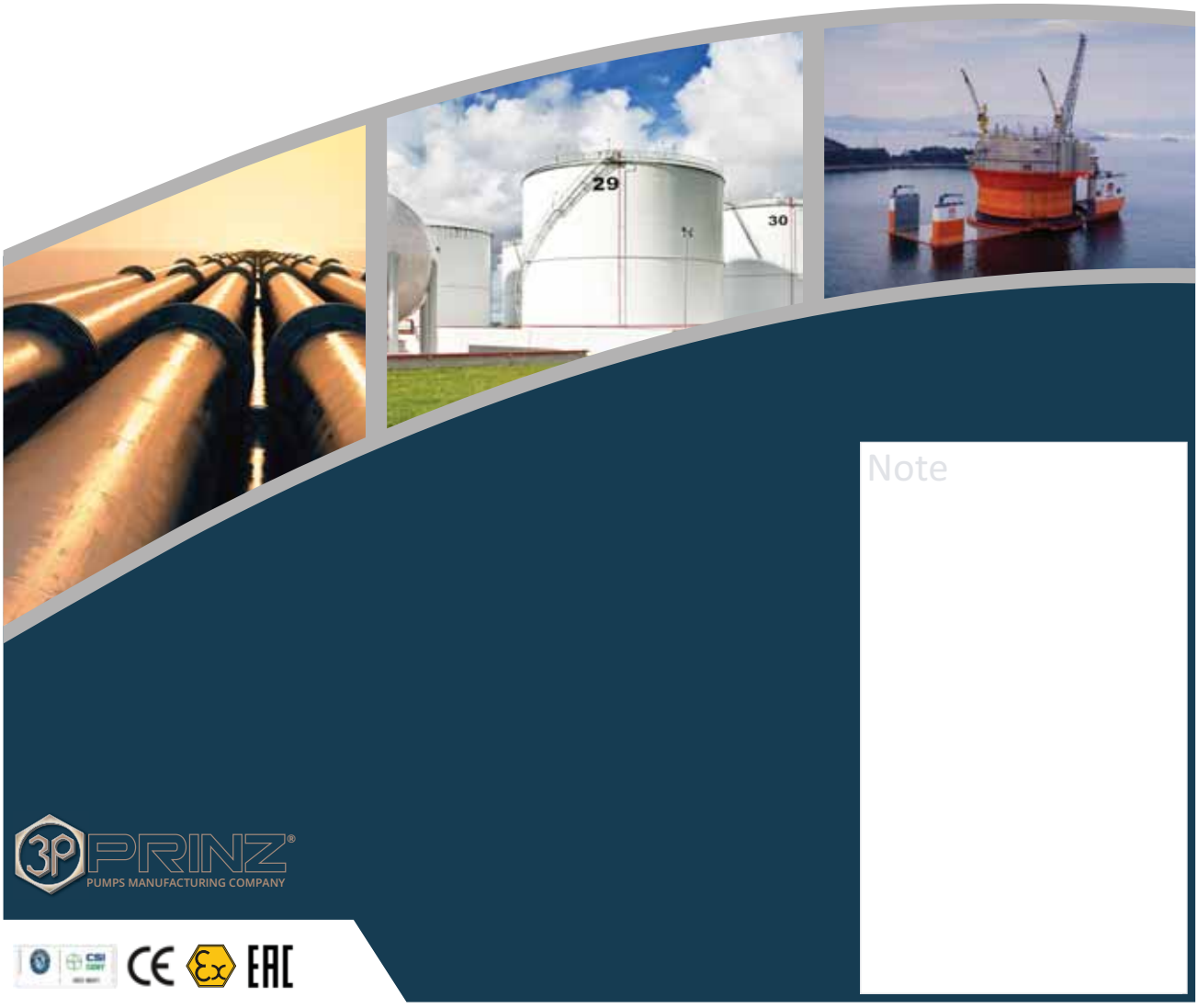
PUMP TYPE	TWIN SCREW PUMPS - EXTERNAL TIMING GEARS		
Pump Series	**HD Series:**	**HDL Series:**	**HDV Series :**
Installation Options:	**Horizontal (Cast Casing)**	**Horizontal (Fabricated Steel Casing, with Replaceable Liner)**	**Vertical**
Executions:	Standard & API 676 - Timing Gears - External Gears and Bearings		
Optimized for Applications in:	**Oil&Gas, Petrochemical, Chemical, Marine & Shipbuilding, General Industry**		
Suitable to Fluid having the following properties:	Abrasive and not Abrasive		
	Corrosive (Alkaline / Acid / Aggressive) and not Corrosive		
	Low / Medium / High / Very High Viscosities		
	Not Lubricating or Lubricating		
	Medium / High percentage of Gas or Air dissolved in Liquid (Multiphase versions available)		
	Slightly Dirty (small particles)		
Advantages of the Operating Principle:	Capability of handling a Wide Range of viscosities and pressures = one pump for many types of fluids and many flow rates!		
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.		
	Self Priming without any auxiliary devices.		
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.		
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.		
	High Rotating Speeds are possible thanks to the low inertia of the screws.		
	Screws are contact-less so wear-out is minimized and Pump Life is extended.		
	Flow rate is constant even when pressure changes.		
	Reversible at Low Speeds / Pressure.		
	Capability of Dry Running for a limited period and in particular conditions.		
	Low noise level & Low vibration.		
Pump Series	**HD, HDL, HDV Series:**		
Maximum design pressure:	20 bar (standard) [300 psig]		
Flow rates:	up to 3500 m3/h [15400 psig]		
Viscosity of the pumped fluid:	up to 35.000 cSt		
Pipe Nominal Size DN:	from 50 to 750 [from 2" up to 30"]		
Rotation speed:	from 200 up to 2200 rpm		
Temperature range:	-46 / +350 °C [-51 / +662 °F] **- ON REQUEST -60°C**		
Pulsations:	Minimized (almost zero)		
Bearing types:	External Bearings and Gears in oil bath		
Standard Materials:	Casing / Liner	Screws	Shafts
	Cast Iron, Ductile Cast Iron	Ductile Cast Iron	High Strenght Low Alloy Steel
	Carbon Steel (Cast or Fabricated)	High Strenght Low Alloy Steel	Stainless Steel AISI 420
	Low Temperature Carbon Steel (Cast or Fabricated)	Stainless Steel AISI 420	Stainless Steel 17-4 PH
	12% Cr Stainless Steel	Stainless Steel AISI S316/S316L	Stainless Steel XM-19
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel 17-4 PH or AISI 431	Duplex & Super Duplex St. Steel
	Bronze, Nickel Aluminium Bronze	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy
	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy	HVOF Spray Coating /Tungsten Carbide Coating
	Inconel Weld Overlay (cladding)	HVOF Spray Coating /Tungsten Carbide Coating	Chromium Plating
	Monel, Inconel® , Hastelloy	CRA Weld Overlaid	CRA Weld Overlaid
	Ni-Resist	Nitriding	Nitriding
Customized materials:	**Other Alloys and Material Combinations are available on request**		
	NORSOK Compliant Materials are available on request		
Main Application Fields:	**HD / HDL / HDV Series**		
	OIL & GAS UPSTREAM / MIDSTREAM / DOWNSTREAM: FPSOs, Offshore Platforms, Oil Fields, Oil Pipelines, Gathering Stations, Tank Storages / Terminals		
	PETROCHEMICAL: Refinery, Petrochemical Complex, Lubricants Plants, Bitumen/Asphalt/Tar Plants		
	CHEMICAL: Resin Production, Paint Production, Green Fuels, Polymeric Suspensions		
	MARINE & SHIPBUILDING: Tankers, Barges, Cargo Ships, Support Vessels, FPSOs, Offshore Platforms Hulls		
	POWER GENERATION: Heavy Fuel Oil Power Plants, Lube Oil Systems		



UD - UDL/JDL - UDV/JDV
Series



Note

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PUMP TYPE	TWIN SCREW PUMPS - EXTERNAL TIMING GEARS		
Pump Series	**UD Series:**	**UDL Series & JDL Series:**	**UDV Series & JDV Series:**
Installation Options:	**Horizontal (Cast Casing)**	**Horizontal (Fabricated Steel Casing, with Replaceable Liner)**	**Vertical**
Executions:	Standard & API 676 - Timing Gears - External Gears and Bearings		
Optimized for Applications in:	**Oil&Gas Upstream / Midstream, Petrochemical, Chemical, Shipbuilding**		
Suitable to Fluid having the following properties:	Abrasive and not Abrasive		
	Corrosive (Alkaline / Acid / Aggressive) and not Corrosive		
	Low / Medium / High / Very High Viscosities		
	Not Lubricating or Lubricating		
	Medium / High percentage of Gas or Air dissolved in Liquid (Multiphase versions available)		
	Slightly Dirty (small particles)		
Advantages of the Operating Principle:	Capability of handling a Wide Range of viscosities and pressures = one pump for many types of fluids and many flow rates!		
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.		
	Self Priming without any auxiliary devices.		
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.		
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.		
	High Rotating Speeds are possible thanks to the low inertia of the screws.		
	Screws are contact-less so wear-out is minimized and Pump Life is extended.		
	Flow rate is constant even when pressure changes.		
	Reversible at Low Speeds / Pressure.		
	Capability of Dry Running for a limited period and in particular conditions.		
	Low noise level & Low vibration.		
Pump Series	**UD, UDL Series:**	**JD, JDL Series:**	
Maximum design pressure:	50 barg [730 psig]	149 barg [2170 psig]	
		max ANSI 900 rating	
Flow rates:	up to 1000 m3/h [4000 GPM]	up to 600 m3/h [2650 GPM]	
Viscosity of the pumped fluid:	up to 35.000 cSt	up to 35.000 cSt	
Pipe Nominal Size DN:	from 50 to 400 – from 2" to 16"	from 50 to 400 – from 2" to 16"	
Rotation speed:	from 200 up to 2200 rpm	from 200 up to 2200 rpm	
Temperature range:	-46 / +350 °C [-51 / +662 °F] **- ON REQUEST -60°C**	-46 / +350 °C [-51 / +662 °F] **- ON REQUEST -60°C**	
Pulsations:	Minimized (almost zero)	Minimized (almost zero)	
Bearing types:	External Bearings and Gears in oil bath	External Bearings and Gears in oil bath	
Standard Materials:	Casing / Liner	Screws	Shafts
	Cast Iron, Ductile Cast Iron	Ductile Cast Iron	High Strenght Low Alloy Steel
	Carbon Steel (Cast or Fabricated)	High Strenght Low Alloy Steel	Stainless Steel AISI 420
	Low Temperature Carbon Steel (Cast or Fabricated)	Stainless Steel AISI 420	Stainless Steel 17-4 PH
	12% Cr Stainless Steel	Stainless Steel AISI S316/S316L	Stainless Steel XM-19
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel 17-4 PH or AISI 431	Duplex & Super Duplex St. Steel
	Bronze, Nickel Aluminium Bronze	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy
	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy	HVOF Spray Coating /Tungsten Carbide Coating
	Inconel Weld Overlay (cladding)	HVOF Spray Coating /Tungsten Carbide Coating	Chromium Plating
	Monel, Inconel® , Hastelloy	CRA Weld Overlaid	CRA Weld Overlaid
	Ni-Resist	Nitriding	Nitriding
Customized materials:	**Other Alloys and Material Combinations are available on request**		
	NORSOK Compliant Materials are available on request		
Main Application Fields:	**UD / UDL / UDV / JDL / JDV Series**		
	OIL & GAS UPSTREAM / MIDSTREAM: FPSOs, Offshore Platforms, Oil Fields, Oil Pipelines, Gathering Stations		
	PETROCHEMICAL: Refinery, Petrochemical Complex, Bitumen/Asphalt/Tar Plants		
	CHEMICAL: Resin Production, Green Fuels, Polymeric Suspensions		
	MARINE & SHIPBUILDING: Tankers, FPSOs, Offshore Platforms Hulls		
	POWER GENERATION: Heavy Fuel Oil Power Plants		

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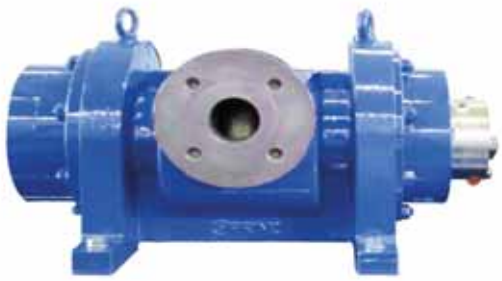

SR / SD / SDL / SRV / SDV
Series

Note

3P PRINZ PUMPS MANUFACTURING COMPANY

HP : + 62 8151 420 7600 (WA) ; +6281280288677 (WA)
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PUMP TYPE	TWIN SCREW PUMPS - INTERNAL TIMING GEARS			
Pump Series	**SR Series:**	**SD Series:**	**SDL Series:**	**SRV Series & SDV Series:**
Installation Options:	**Horizontal (Cast Casing)**	**Horizontal (Cast Casing)**	**Horizontal (Fabricated Steel Casing, with Replaceable Liner)**	**Vertical**
Executions:	Standard & API 676 - Internal Gears and Bearings (Wetted and cooled by the Pumped Fluid)			
Optimized for Applications in:	**Oil&Gas, Petrochemical, Chemical, Marine & Shipbuilding, Power Generation**			
Suitable to Fluid having the following properties:	Not Abrasive			
	Not Corrosive / Slightly Corrosive			
	Medium / High Viscosities			
	Lubricating / Slightly Lubricating			
	Small percentage of Gas or Air dissolved in Liquid			
	Clean, with Minimal Impurities (Small Amount of Solid Particles)			
Advantages of the Operating Principle:	Capability of handling a Wide Range of viscosities and pressures = one pump for many types of fluids and many flow rates!			
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.			
	Self Priming without any auxiliary devices.			
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.			
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.			
	High Rotating Speeds are possible thanks to the low inertia of the screws.			
	Screws are contact-less so wear-out is minimized and Pump Life is extended.			
	Flow rate is constant even when pressure changes.			
	Reversible at Low Speeds / Pressure.			
	Capability of Dry Running for a limited period and in particular conditions.			
	Low noise level & Low vibration.			
Pump Series	**SR, SRV Series:**	**SD Series:**	**SDL, SDV Series:**	
Maximum design pressure:	14 bar (standard) [204 psig]	20 bar (standard) [300 psig]	50 barg [730 psig]	
Flow rates:	up to 1200 m3/h [5280 GPM]	up to 1200 m3/h [5280 GPM]	up to 1200 m3/h [5280 GPM]	
Viscosity of the pumped fluid:	up to 2.000 cSt	up to 2.000 cSt	up to 2.000 cSt	
Pipe Nominal Size DN:	from 50 to 400 – from 2" to 16"	from 50 to 400 – from 2" to 16"	from 50 to 400 – from 2" to 16"	
Rotation speed:	from 200 up to 2200 rpm	from 200 up to 2200 rpm	from 200 up to 2200 rpm	
Temperature range:	-46 / +300 °C [-51 / +572 °F] **- ON REQUEST -60°C**	-46 / +300 °C [-51 / +572 °F] **- ON REQUEST -60°C**	-46 / +350 °C [-51 / +662 °F] **- ON REQUEST -60°C**	
Pulsations:	Minimized (almost zero)	Minimized (almost zero)	Minimized (almost zero)	
Bearing types:	Internal Bearings and Gears, wetted and cooled by the Pumped Fluid	Internal Bearings and Gears, wetted and cooled by the Pumped Fluid	Internal Bearings and Gears, wetted and cooled by the Pumped Fluid	
Standard Materials:	**Casing / Liner**	**Screws**	**Shafts**	
	Cast Iron, Ductile Cast Iron	Ductile Cast Iron	High Strenght Low Alloy Steel	
	Carbon Steel (Cast or Fabricated)	High Strenght Low Alloy Steel	Stainless Steel AISI 420	
	Low Temperature Carbon Steel (Cast or Fabricated)	Stainless Steel AISI 420	Stainless Steel 17-4 PH	
	12% Cr Stainless Steel	Stainless Steel AISI S316/S316L	Stainless Steel XM-19	
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel 17-4 PH or AISI 431	Nitriding	
		Nitriding		
Customized materials:	**Other Alloys and Material Combinations are available on request**			
	NORSOK Compliant Materials are available on request			
Main Application Fields:	**SR / SD / SDL / SRV / SDV Series**			
	OIL & GAS MIDSTREAM / DOWNSTREAM: Tank Storages / Terminals, Oil Pipelines			
	PETROCHEMICAL: Refinery, Petrochemical Complex, Lubricants Plants			
	CHEMICAL: Green Fuels, Clean Chemicals			
	MARINE & SHIPBUILDING: Tankers, Barges, Cargo Ships, Support Vessels			
	POWER GENERATION: Heavy Fuel Oil Power Plants, Lube Oil Systems			

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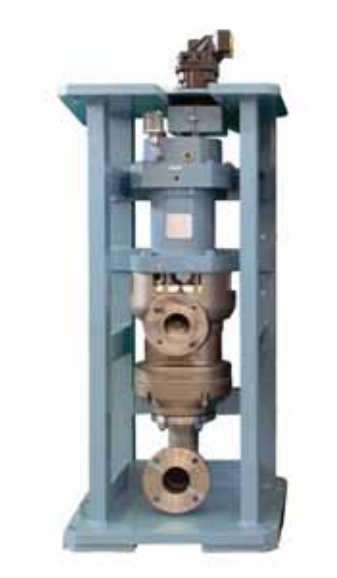

HM / HM-V Series

Note

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PUMP TYPE	SCREW PUMPS - TIMING EXTERNAL GEARS		
Pump Series	**HM Series:**	**HM-V Series:**	
Installation Options:	**Horizontal**	**Vertical**	
Executions:	Standard & API 676 - Timing Gears - External Gears and Bearings		
Optimized for Applications in:	**Oil&Gas, Petrochemical, Chemical, Marine & Shipbuilding, Power Generation, General Industry**		
Suitable to Fluid having the following properties:	Abrasive and not Abrasive		
	Corrosive (Alkaline / Acid / Aggressive) and not Corrosive		
	Low / Medium / High Viscosities		
	Not Lubricating or Lubricating		
	Medium percentage of Gas or Air dissolved in Liquid		
	Slightly Dirty (small particles)		
Advantages of the Operating Principle:	Capability of handling a Wide Range of viscosities and pressures = one pump for many types of fluids and many flow rates!		
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.		
	Self Priming without any auxiliary devices.		
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.		
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.		
	High Rotating Speeds are possible thanks to the low inertia of the screws.		
	Screws are contact-less so wear-out is minimized and Pump Life is extended.		
	Flow rate is constant even when pressure changes.		
	Reversible at Low Speeds / Pressure.		
	Capability of Dry Running for a limited period and in particular conditions.		
	Low noise level & Low vibration.		
Pump Series	**HM Series:**		
Maximum design pressure:	20 bar (standard)		
Flow rates:	up to 80 m3/h [353 GPM]		
Viscosity of the pumped fluid:	up to 35.000 cSt		
Pipe Nominal Size DN:	from 40 to 100 [from 1.1/2" to 4"]		
Rotation speed:	from 200 up to 3600 rpm		
Temperature range:	-46 / +300 °C [-51 / +572 °F] **- ON REQUEST -60°C**		
Pulsations:	Minimized (almost zero)		
Bearing types:	External Bearings and Gears in oil bath		
Standard Materials:	**Casing / Liner**	**Screws**	**Shafts**
	Cast Iron, Ductile Cast Iron	Ductile Cast Iron	High Strenght Low Alloy Steel
	Carbon Steel (Cast or Fabricated) High Strenght Low Alloy Steel	High Strenght Low Alloy Steel	Stainless Steel AISI 420
	Low Temperature Carbon Steel (Cast or Fabricated) Stainless Steel AISI 420	Stainless Steel AISI 420	Stainless Steel 17-4 PH
	12% Cr Stainless Steel Stainless Steel AISI S316/S316L	Stainless Steel AISI S316/S316L	Stainless Steel XM-19
	Stainless Steel AISI S316/S316L (Cast or Fabricated) Stainless Steel 17-4 PH or AISI 431	Stainless Steel 17-4 PH or AISI 431	Duplex & Super Duplex St. Steel
	Bronze, Nickel Aluminium Bronze Duplex & Super Duplex St. Steel	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy
	Duplex & Super Duplex St. Steel Monel, Inconel® , Hastelloy	Monel, Inconel® , Hastelloy	HVOF Spray Coating /Tungsten Carbide Coating
	Inconel Weld Overlay (cladding) HVOF Spray Coating /Tungsten Carbide Coating	HVOF Spray Coating /Tungsten Carbide Coating	Chromium Plating
	Monel, Inconel® , Hastelloy CRA Weld Overlaid	CRA Weld Overlaid	CRA Weld Overlaid
	Ni-Resist Nitriding	Nitriding	Nitriding
Customized materials:	Other Alloys and Material Combinations are available on request		
	NORSOK Compliant Materials are available on request		
Main Application Fields:	**HM / HMV Series**		
	OIL & GAS UPSTREAM / MIDSTREAM / DOWNSTREAM: FPSOs, Offshore Platforms, Oil Fields, Oil Pipelines, Gathering Stations		
	PETROCHEMICAL: Refinery, Petrochemical Complex, Lubricants Plants, Bitumen/Asphalt/Tar Plants		
	CHEMICAL: Resin Production, Paint Production, Green Fuels, Polymeric Suspensions		
	MARINE & SHIPBUILDING: Tankers, Barges, Cargo Ships, Support Vessels, FPSOs, Offshore Platforms Hulls		
	POWER GENERATION: Heavy Fuel Oil Power Plants, Lube Oil Systems		

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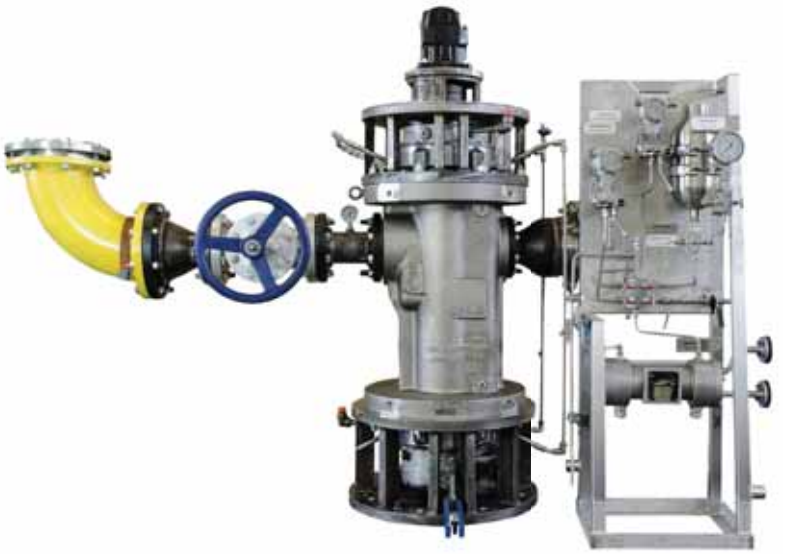

VDC Series

Note

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PUMP TYPE	VERTICAL TWIN SCREW PUMPS		
Pump Series	**VDC Series:**		
Installation Options:	Vertical - Submerged		
Executions:	Standard & API 676 - Timing Gears - External Gears and Bearings		
Optimized for Applications in:	**Oil&Gas, Petrochemical, Marine & Shipbuilding**		
Suitable to Fluid having the following properties:	Abrasive and not Abrasive		
	Corrosive (Alkaline / Acid / Aggressive) and not Corrosive		
	Low / Medium / High / Very High Viscosities		
	Not Lubricating or Lubricating		
	Medium / High percentage of Gas or Air dissolved in Liquid (Multiphase versions available)		
	Slightly Dirty (small particles)		
Advantages of the Operating Principle:	Capability of handling a Wide Range of viscosities and pressures = one pump for many types of fluids and many flow rates!		
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.		
	Self Priming without any auxiliary devices.		
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.		
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.		
	High Rotating Speeds are possible thanks to the low inertia of the screws.		
	Screws are contact-less so wear-out is minimized and Pump Life is extended.		
	Flow rate is constant even when pressure changes.		
	Reversible at Low Speeds / Pressure.		
	Capability of Dry Running for a limited period and in particular conditions.		
	Low noise level & Low vibration.		
Pump Series	**VDC Series:**		
Maximum design pressure:	50 barg [730 psig]		
Flow rates:	up to 600 m3/h [2650 GPM]		
Viscosity of the pumped fluid:	up to 35.000 cSt		
Pipe Nominal Size DN:	from 50 to 400 – from 2" to 16"		
Rotation speed:	from 200 up to 2200 rpm		
Temperature range:	-46 / +350 °C [-51 / +662 °F] **- ON REQUEST -60°C**		
Pulsations:	Minimized (almost zero)		
Bearing types:	Bearings and Gears wetted by Pumped Fluid		
Bearing types:	External Bearings and Gears in oil bath		
Standard Materials:	Casing / Liner	Screws	Shafts
	Cast Iron, Ductile Cast Iron	Ductile Cast Iron	High Strenght Low Alloy Steel
	Carbon Steel (Cast or Fabricated)	High Strenght Low Alloy Steel	Stainless Steel AISI 420
	Low Temperature Carbon Steel (Cast or Fabricated)	Stainless Steel AISI 420	Stainless Steel 17-4 PH
	12% Cr Stainless Steel	Stainless Steel AISI S316/S316L	Stainless Steel XM-19
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel 17-4 PH or AISI 431	Duplex & Super Duplex St. Steel
	Bronze, Nickel Aluminium Bronze	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy
	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy	HVOF Spray Coating /Tungsten Carbide Coating
	Inconel Weld Overlay (cladding)	HVOF Spray Coating /Tungsten Carbide Coating	Chromium Plating
	Monel, Inconel® , Hastelloy	CRA Weld Overlaid	CRA Weld Overlaid
	Ni-Resist	Nitriding	Nitriding
Customized materials:	Other Alloys and Material Combinations are available on request		
	NORSOK Compliant Materials are available on request		
Main Application Fields:	VDC Series		
	OIL & GAS UPSTREAM / MIDSTREAM / DOWNSTREAM: Tank Storages, Gathering Stations		
	PETROCHEMICAL: Refinery, Petrochemical Complex		
	MARINE & SHIPBUILDING: Tankers, Barges, FPSOs		

Your Authorised Distributor :
PT. LUGATA KARYA TEKNIK
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MP
Series

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E-mail : jonlin@cbn.net.id ; Jonlin.Napitu@gmail.com

PUMP TYPE	MULTIPHASE TWIN SCREW PUMPS		
Pump Series **MAX GVF (Gas Void Fraction)**	**MP Series:** **up to 60% GVF**		
Installation Options:	**Horizontal**		
Executions:	Standard & API 676 - External Timing Gears and Bearings		
Optimized for Applications in:	**Oil&Gas**		
Suitable to Fluid having the following properties:	Abrasive and not Abrasive		
	Corrosive (Alkaline / Acid / Aggressive) and not Corrosive		
	Low / Medium / High Viscosities		
	Not Lubricating or Lubricating		
	Up to 60% of Gas Void Fraction		
	Slightly Dirty (small sand particles) Special Hardening available (Tungsten Carbide Coating)		
Advantages of the Operating Principle:	**Capability of handling a Wide Range of viscosities and pressures** **= one pump for many types of fluids and many flow rates!**		
	High Suction Lift Capability – the pump NPSH being very low - down to 1,5 meters.		
	Self Priming without any auxiliary devices.		
	Capable to pump very viscous fluids thanks to its smooth axial and low-pulsation movement.		
	Pulsations are minimized and flow rate is uniform, allowing to handle fluids that are very viscous and sensitive to shear stresses or turbulences, thanks to the low Internal velocities given by the screws movement.		
	High Rotating Speeds are possible thanks to the low inertia of the screws.		
	Screws are contact-less so wear-out is minimized and Pump Life is extended.		
	Flow rate is constant even when pressure changes.		
	Capable of Pumping Gas mixed with Liquid.		
	Capability of Dry Running for a limited period and in particular conditions.		
	Low noise level & Low vibration.		
Pump Series	**MP Series:**		
Maximum design pressure:	149 barg [2170 psig]		
	max ANSI 900 rating		
Flow rates (liquid equivalent):	up to 3500 m3/h [15400 psig]		
Viscosity of the pumped fluid:	up to 5.000 cSt		
Pipe Nominal Size DN:	from 50 to 750 [from 2" up to 30"]		
Rotation speed:	from 200 up to 2200 rpm		
Temperature range:	-46 / +350 °C [-51 / +662 °F] **- ON REQUEST -60°C**		
Pulsations:	Minimized (almost zero)		
Bearing types:	External Bearings and Gears in oil bath		
Liquid Recirculation Options:	**- No Recirculation** **- Internal Liquid Recirculation Valve**		
Standard Materials:	**Casing / Liner**	**Screws**	**Shafts**
	Carbon Steel (Cast or Fabricated)	Ductile Cast Iron	High Strenght Low Alloy Steel
	Low Temperature Carbon Steel (Cast or Fabricated)	High Strenght Low Alloy Steel	Stainless Steel AISI 420
	12% Cr Stainless Steel	Stainless Steel AISI 420	Stainless Steel 17-4 PH
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel AISI S316/S316L	Stainless Steel XM-19
	Stainless Steel AISI S316/S316L (Cast or Fabricated)	Stainless Steel 17-4 PH or AISI 431	Duplex & Super Duplex St. Steel
	Duplex & Super Duplex St. Steel	Duplex & Super Duplex St. Steel	Monel, Inconel® , Hastelloy
	Inconel Weld Overlay (cladding)	Monel, Inconel® , Hastelloy	HVOF Spray Coating /Tungsten Carbide Coating
	Monel, Inconel® , Hastelloy	HVOF Spray Coating /Tungsten Carbide Coating	Chromium Plating
	Ni-Resist	CRA Weld Overlaid	CRA Weld Overlaid
		Nitriding	Nitriding
Customized materials:	**Other Alloys and Material Combinations are available on request**		
	NORSOK Compliant Materials are available on request		
Main Application Fields:	**MP SERIES**		
	OIL & GAS UPSTREAM / MIDSTREAM: FPSOs, Offshore Platforms, Oil Fields, Oil Pipelines, Gathering Stations		

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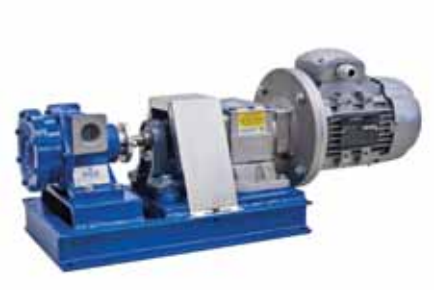

M Series

D Series

M & D
Hollow Rotary Disk Pump
Series

Note

3P PRINZ® PUMPS MANUFACTURING COMPANY

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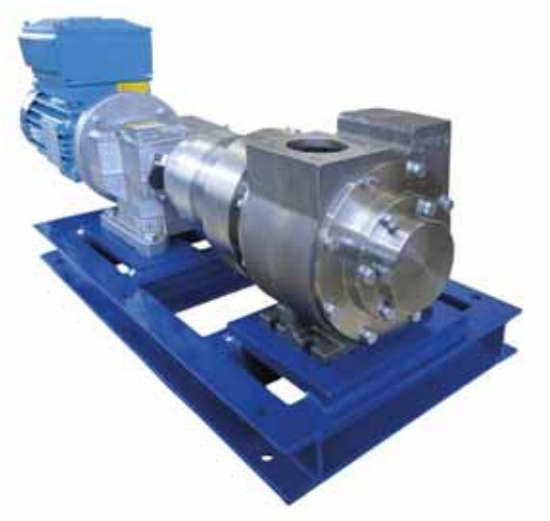
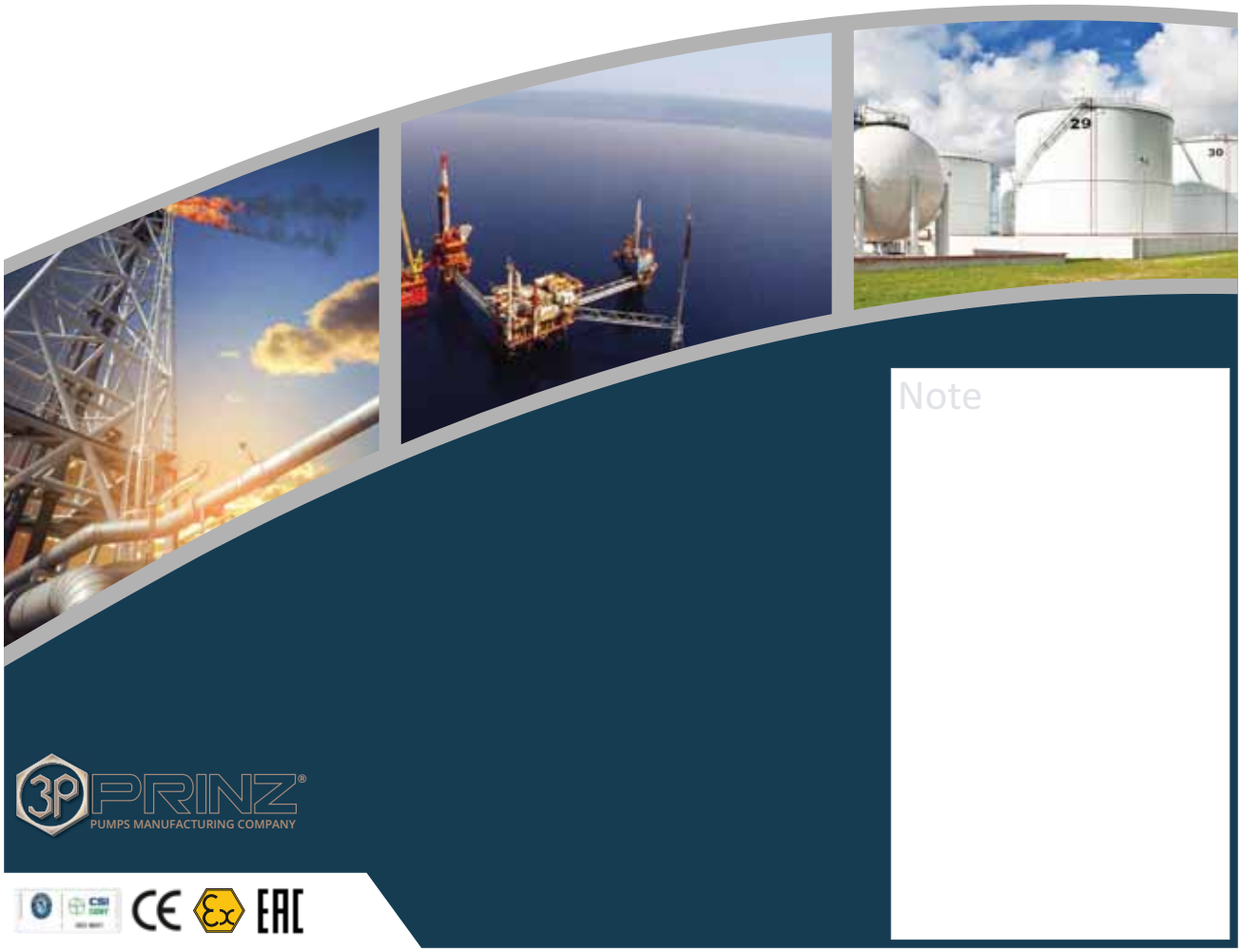
PUMP TYPE	HOLLOW DISK PUMPS			
Executions:	Standard & API 676			
Advantages:	Self Priming without any auxiliary devices - just fill out the cavity with liquid before start-up			
	Low operating speeds - capable of handling very viscous and fluids shear-sensitive - less wear and higher reliability			
	Reverse flow by operating in reverse rotation while keeping constant capacity			
	Elasticity of the disk, with self-recover of the worn out parts and of the thermal expansions, allowing the passage of solid particles in the fluid			
Pump Series	**M Series:**		**D Series:**	
Maximum differential pressure:	7 bar (option 9 bar)		7 bar (option 9 bar)	
Flow rates:	from 0,3 to 100 m3/h [from 1.3 to 440 GPM]		from 20 to 210 m3/h [from 88 to 925 GPM]	
Viscosity of the pumped fluid:	up to 200.000 cSt (from medium to very high)		up to 200.000 cSt (from medium to very high)	
Pipe Nominal Size DN:	from 25 to 150		from 100 to 200	
Rotation speed:	up to 500 rpm		up to 400 rpm	
Temperature range:	-20 / +280 °C [-4 / 536 °F]		-20 / +280 °C [-4 / 536 °F]	
Handling Solid Particles & Dirty Fluids:	Yes		Yes	
Handling Aggressive Fluids:	Yes		Yes	
Pulsations:	Yes		Very low	
Dosing capability:	Good		Good	
Flanged connections:	Available (UNI PN10 - DIN PN16 & ANSI 150)		Available (UNI PN10 - DIN PN16 & ANSI 150)	
Standard Materials:	The Hollow Rotary Disk Pump can be supplied with the following combined materials:			
	Casing and Cover	Impeller Disk	Shaft	
	Cast Iron G25	Carbon Steel C40	Carbon Steel C40	
	Cast Iron, Nickel Plated	Stainless Steel AISI 316	Stainless Steel AISI 316	
	Cast Iron, Chrome plated	Nickel Plated Carbon Steel C40	Nitrided Carbon Steel C40	
	Stainless Steel AISI 316	Chrome plated Carbon Steel C40	Duplex Stainless Steel	
	Bronze B10	Duplex Stainless Steel Hardened		
Special Materials:	Duplex Stainless Steel	Super Duplex	Super Duplex	
	Super Duplex	Hastelloy	Hastelloy	
	Inconel	Titanium	Titanium	
	Titanium	Monel	Monel	
	Nickel-Aluminium Bronze			
	Alloy 20			
	Hastelloy			
Complete Units:	We supply the complete unit: Pump, Reduction Gear or Variable Speed Drive, Motor, Baseplate			
On Request	Please see our website www.3pprinz.com for further information about our wide range of customization, options and accessories			
Certifications & Executions	Pump		Electrical group	Other Motors
	CE Standard		CE Standard	Diesel Engine on request
	ATEX on request		ATEX on request	Hydraulic Motor on request
	API 676 on request		UL / NEMA on request	
	CE 1935 / 2004 (food contact) on request			
APPLICATION FIELDS				
Oil & Gas	Hydrocarbons (light and heavy)	All types of Oils	Bitumen and Tar	Crude Oil (also Sour)
	Chemical Products	Muds		
Petrochemical Industry:	Light and Heavy Hydrocarbons	Lubricating Oil	Bitumen and Tar	Diesel
	Petrochemical Products	Gasoline	Fuel Oil	All types of Oils
	Fluids from the Refinery Process	Phenol	Crude Oil	Benzene and Toluene
Marine & Shipbuilding:	Transfer of Tanker Fluids	Fuel Oil	Diesel	Bilge Water
	Cargo Load and Offload	Mud, Sludge, Ooze	Seawater	Recycled Oil
	Service Fluids and Water	Waste Oil	Sewage	Residues



CN Rotary Vane Pump Series



Note

PRINZ PUMPS MANUFACTURING COMPANY

Pump type	ROTARY VANE PUMP - CN Series				
Executions:	**Standard & API 676**				
Advantages:	Self Priming				
	High Suction Lift				
	Self-adjustment of Wear Out				
	Capable of Pumping Low Viscosity Fluids at Outstanding Performances				
	Lower Power Consumption and Higher Capacity compared to other Positive Displacement Pumps				
	Interchangeable ports dimensions with other Major Rotary Vane Suppliers				
	Accurate Selection of Vanes Materials for allowing very low friction and minimal wear-out				
	Easy and Fast Maintenance (no need to disassembly from main line)				
	Versions for Reversible Operation (Double Shaft) are available for Loading and Unloading				
	Suitable to a wide range of Temperatures				
	PTO driven versions are available				
CN Series Pump Model	**CN30**	**CN40**	**CN50**	**CN60**	**CN70**
Suction Flange Ø	1.1/2" Threaded (Side)	2" (Side)	2,5" (Side)	3" (Side)	4" (Side)
Discharge Flange Ø	1.1/2" Threaded (Side)	2" (Top)	2,5" (Top)	3" (Top)	4" (Top)
Max Rotation speed:	1450 rpm (flow = 15 m3/h)	980 rpm	980 rpm	650 rpm	500 rpm
Flow rate (@ 980 rpm) – 1 cSt	10,5 m3/h	26 m3/h	44 m3/h	-	-
Flow rate (@ 780 rpm) – 1 cSt	8,5 m3/h	20 m3/h	35 m3/h	-	-
Flow rate (@ 640 rpm) – 22 cSt	6,9 m3/h	16 m3/h	28 m3/h	62 m3/h	115 m3/h @500 rpm
Flow rate (@ 400 rpm) – up to 1100 cSt	4,3 m3/h	10 m3/h	18 m3/h	40 m3/h	92 m3/h
Differential pressures [bar]	10 bar	7 bar	7 bar	7 bar	7 bar
Max. pressures [barg]	15 barg	10 barg	10 barg	10 barg	10 barg
Temperature range:	-20 / +150 °C [-4 / 302 °F]	-20 / +150 °C [-4 / 302 °F]	-20 / +150 °C [-4 / 302 °F]	-20 / +150 °C [-4 / 302 °F]	-20 / +150 °C [-4 / 302 °F]
Viscosity of the pumped fluid:	From 0,3 cSt up to 500 cSt ; special executions for viscosities higher than 500 cSt are available on request				
Handling Solid Particles & Dirty Fluids:	Yes (small solids and limited amount)				
Handling Aggressive Fluids:	Yes				
Pulsations:	Very low				
Flanged Adapters:	Available on request: UNI PN10 - DIN PN16 & ANSI 150				
Standard Materials:	**Casing and Cover**		**Vanes**	**Rotor**	**Shaft**
	Ductile Cast Iron GJS-400		Polimeric Fiber	Ductile Cast Iron	Carbon Steel AISI4140
	Cast Steel (ASTM A216 WCB)		Bronze	Carbon Steel	Stainless Steel AISI 316
	Stainless Steel AISI 316		PEEK	Stainless Steel AISI 316	Stainless Steel 17-4PH
Special Materials:	**Duplex Stainless Steel**		**Self Lubricating Alloys**	**Duplex Stainless Steel**	
	Super Duplex St. Steel			Super Duplex St. Steel	
	Inconel			Inconel	Inconel
	Titanium			Titanium	Titanium
	Nickel-Aluminium Bronze			Monel	Monel
	Alloy 20			Hastelloy	Hastelloy
	Hastelloy				
Complete Units:	We supply the complete unit: Pump, Reduction Gear or Variable Speed Drive, Motor, Baseplate				
Certifications & Executions	**Pump**		**Electrical group**	**Other Motors**	
	CE Standard		CE Standard	Diesel Engine on request	
	ATEX on request		ATEX on request	Hydraulic Motor on request	
	API 676 on request		UL / NEMA on request	PTO Power Take-Off	
APPLICATION FIELDS					
Oil & Gas	**Light Hydrocarbons**	**Medium Hydrocarbons**	**Oils**	**Light Crude Oil**	**Solvents**
Marine & Shipbuilding:	**Transfer of Tanker Fluids Cargo Load and Offload**	**Light Fuel Oil Seawater**	**Lube Oil Naptha**	**Diesel**	**Recycled Oil**

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