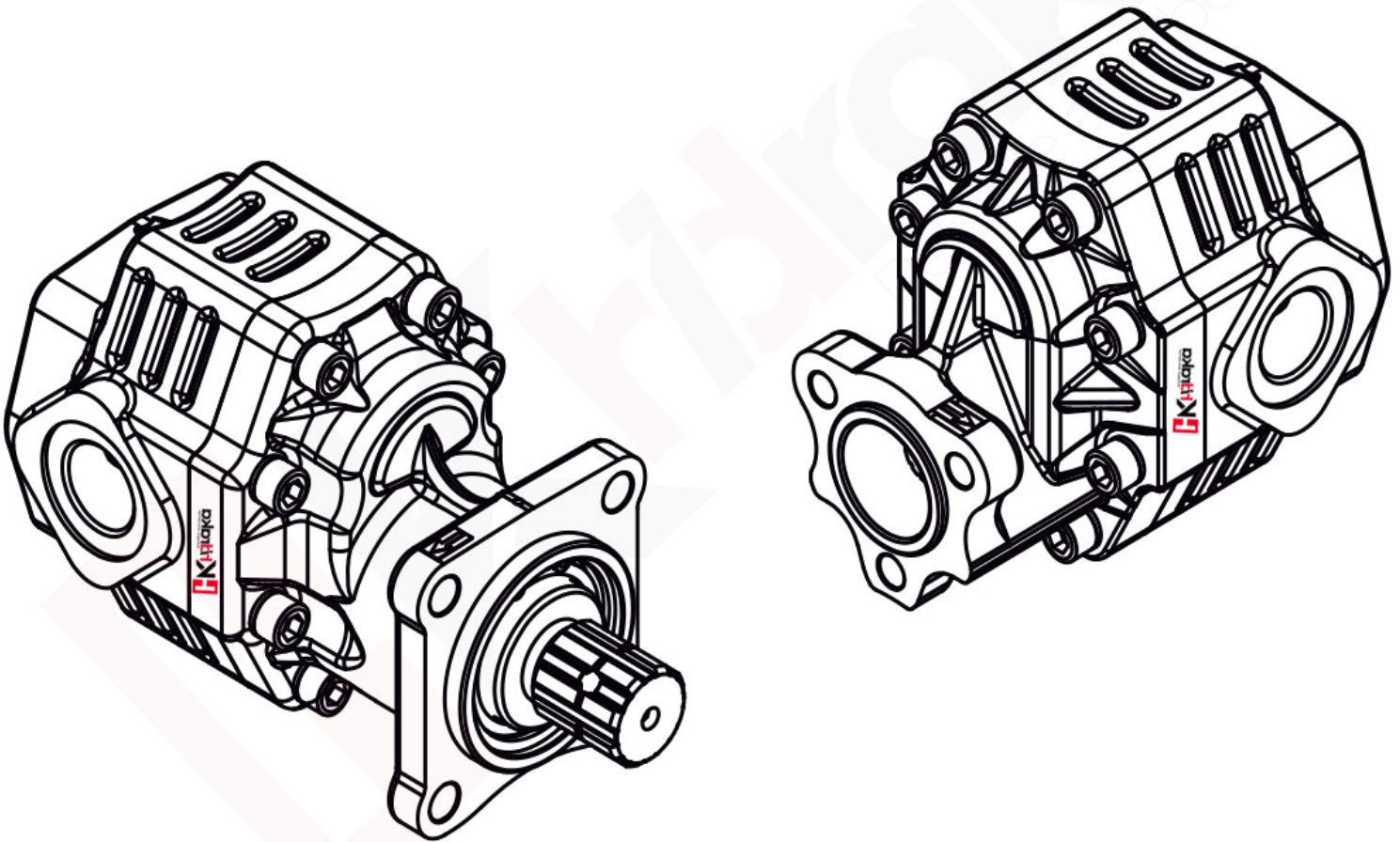




# Single Rotation **Gear Pump**



Discover our **Single Rotation Hydraulic Gear Pumps**, which provide unparalleled efficiency and reliability across a wide range of applications.



**Go to our website :**  
[www.hidraKa.com](http://www.hidraKa.com)

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## What is this?

This document is organized to guide the reader through the technical specifications, product features, benefits, and applications of the **HIDRAKA Single Rotation Hydraulic Gear Pump**.

Each section of the document, from introduction to detailed diagrams and performance charts, is clearly listed, enabling easy navigation and quick access to vital information.

# Product Description



This product is single rotation hydraulic gear pump.

Only hydraulic oil must be using in system that single rotation hydraulic gear pump assembled.

Hydraulic pumps are converting the mechanical energy to hydraulic energy via motor or PTO etc. and create a hydraulic power for pressure of weightiness.

Gear pumps are using on tipper truck , garbage truck , tractor and agricultural machinery.

## DESCRIPTION OF THE ROTATION OF PUMPS AND PTOs

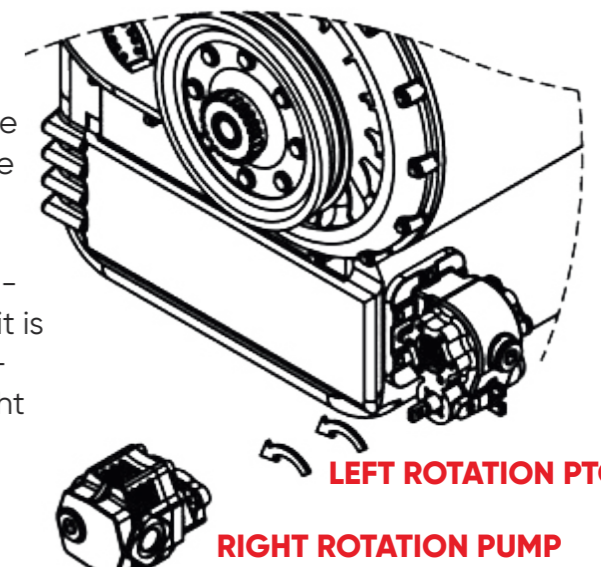
### WARNING!

#### THE MOST IMPORTANT POINT

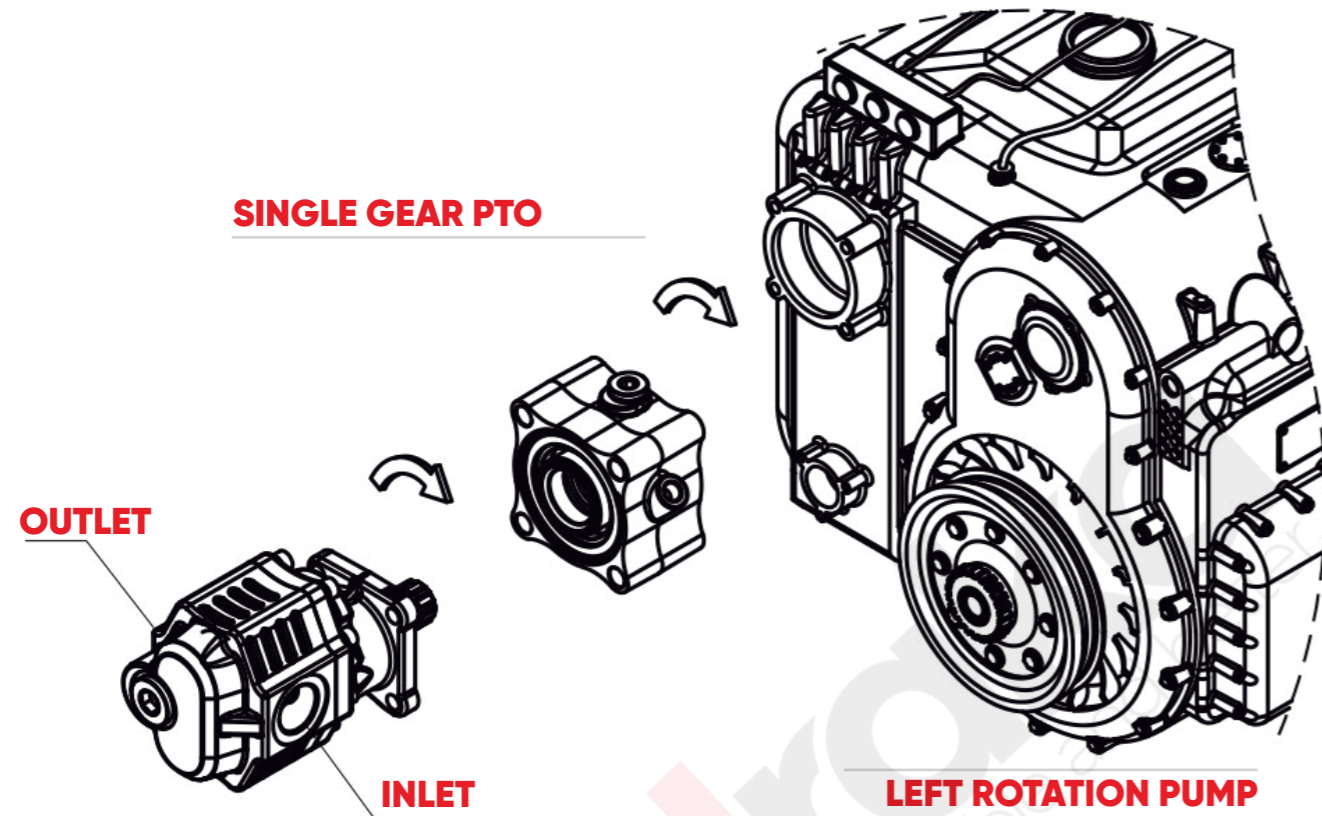
The most important point to consider when mounting pump and PTO is that the directions of rotation should be opposite.

**"Left" rotation pump should be mounted to "Right" rotation PTO. "Right" rotation pump should be mounted to "Left" rotation PTO.**

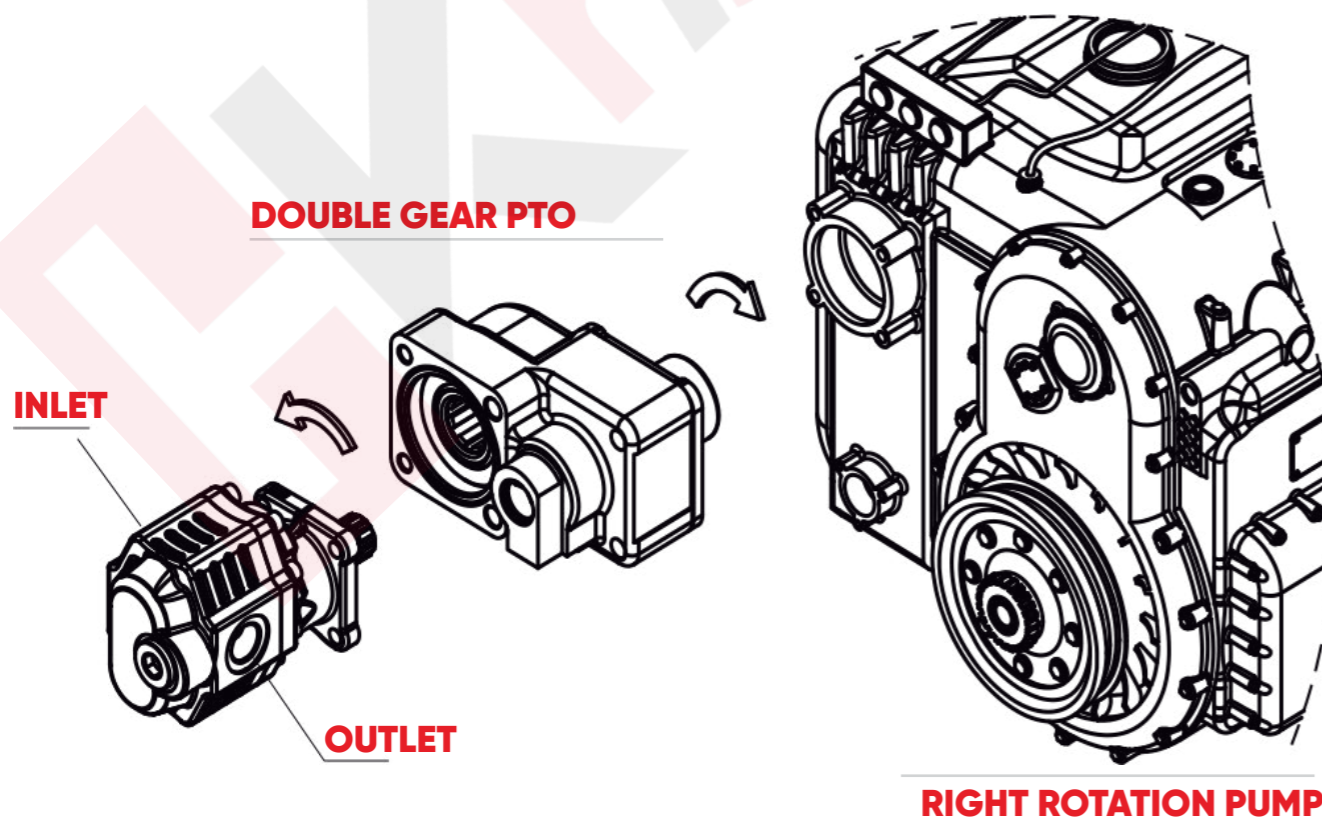
Output shaft should be seen from the opposite when determining the direction of the pump and PTO. If shaft is running counterclockwise, it is left rotation. If it is running clockwise, it is right rotation.



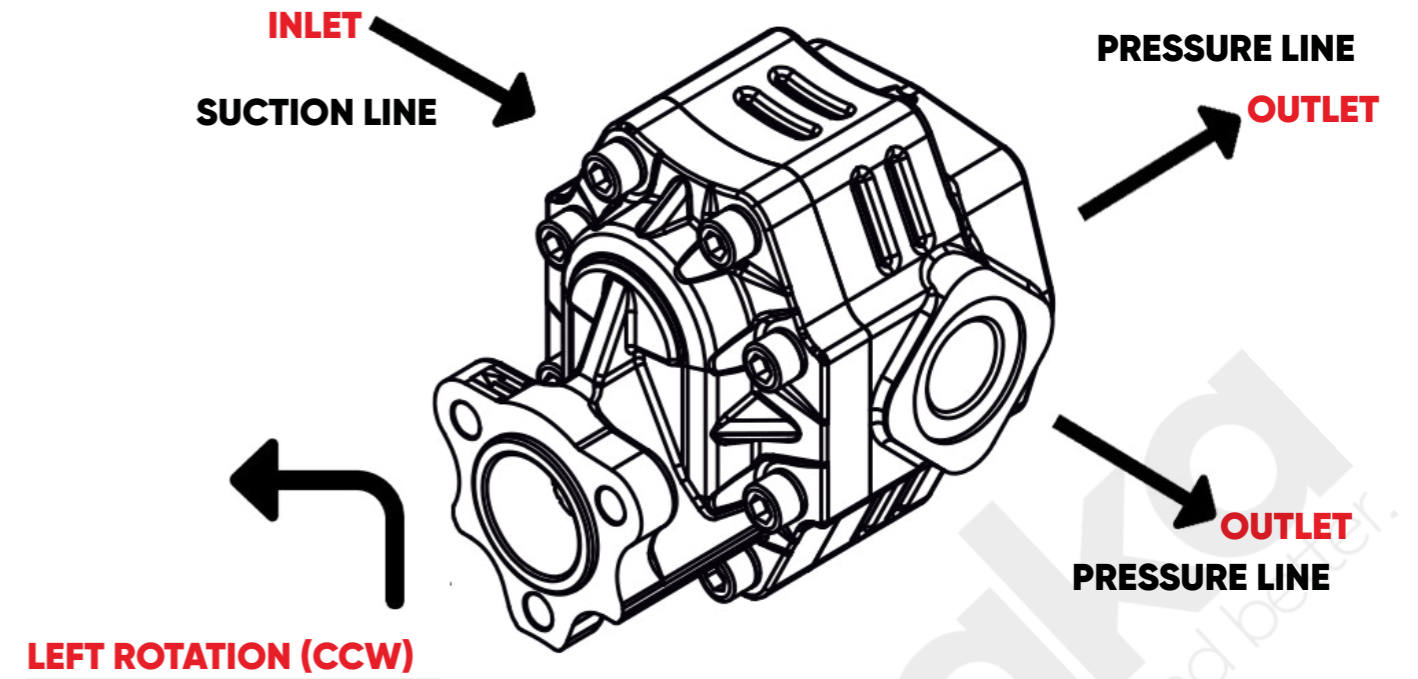
### SINGLE GEAR PTO PTO - PUMP ASSEMBLY



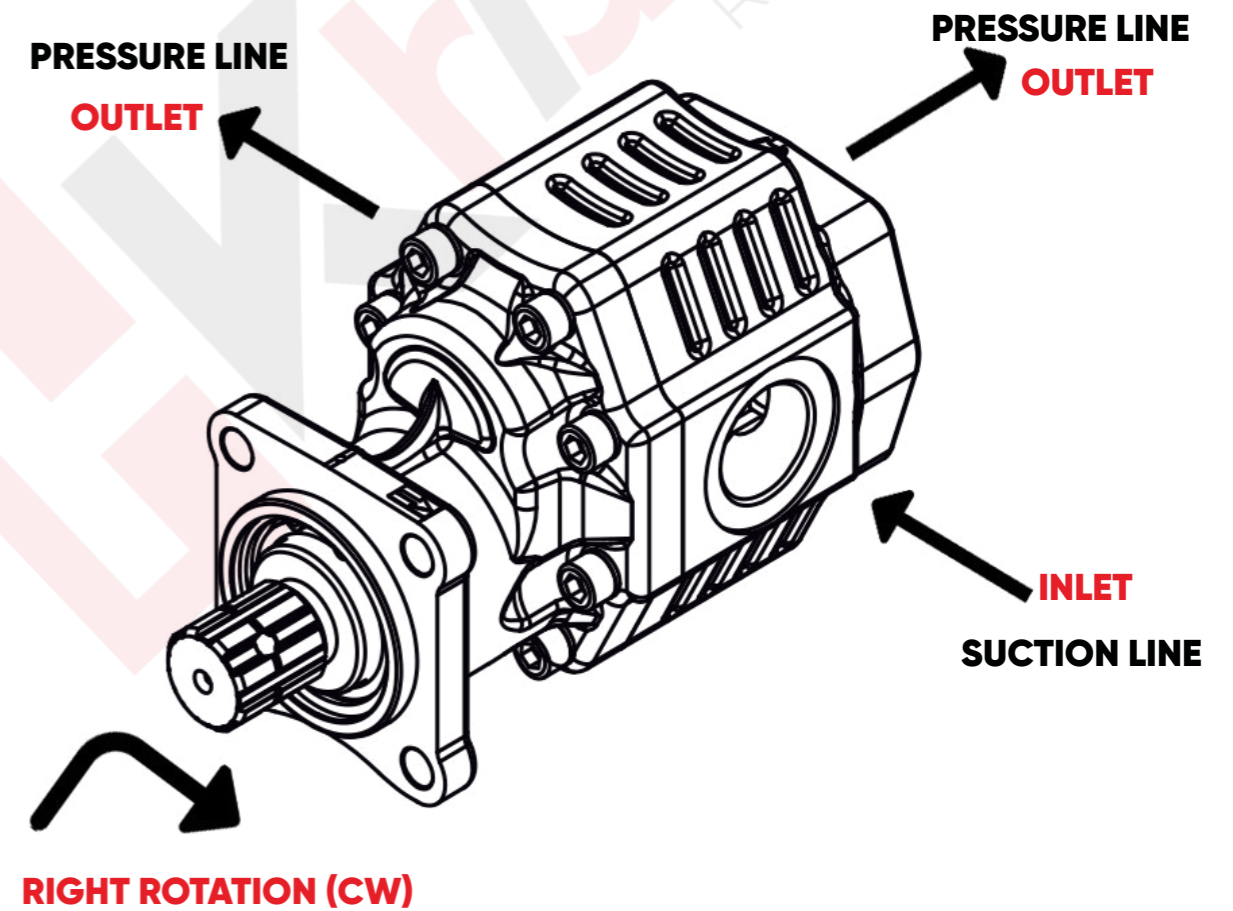
### DOUBLE GEAR PTO PTO - PUMP ASSEMBLY



### FINDING LEFT ROTATION

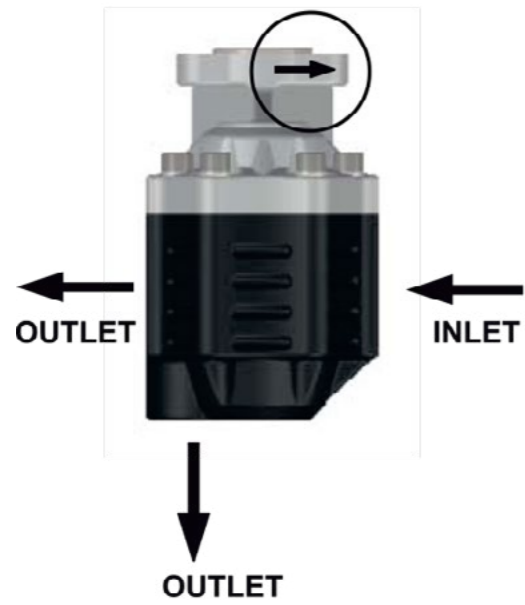


### FINDING RIGHT ROTATION

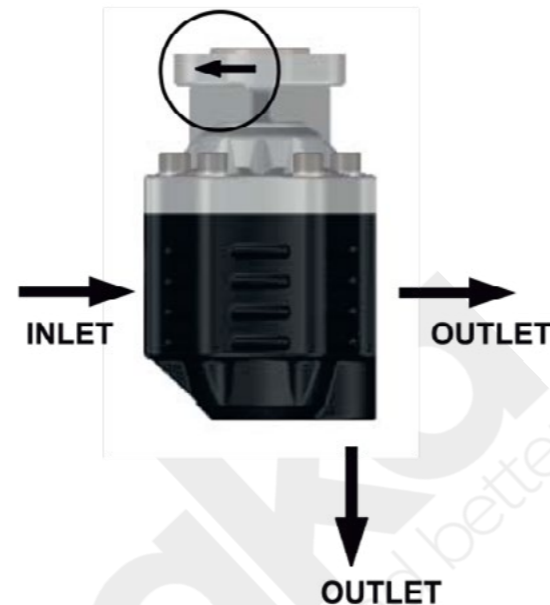


# SINGLE ROTATION GEAR PUMP (UNI)

LEFT ROTATION



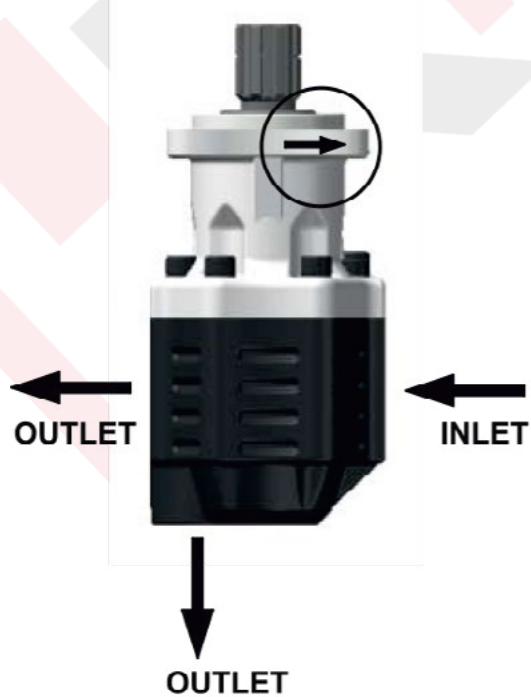
RIGHT ROTATION



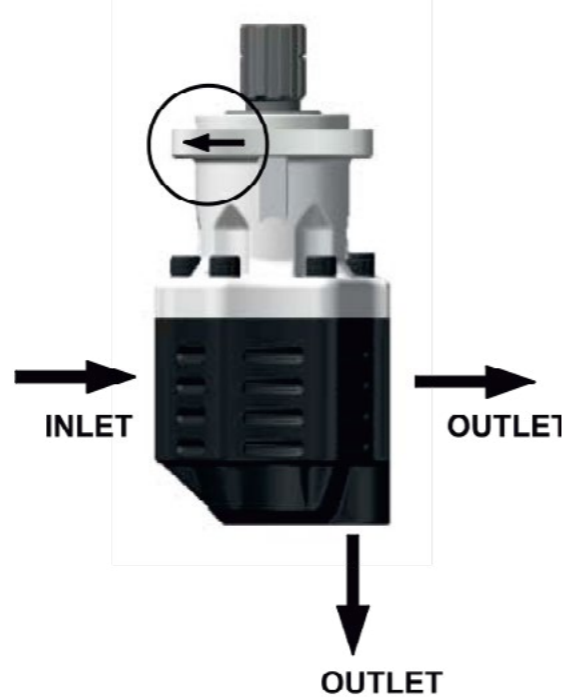
Product out of warranty If do not assembled above

# SINGLE ROTATION GEAR PUMP (ISO)

LEFT ROTATION



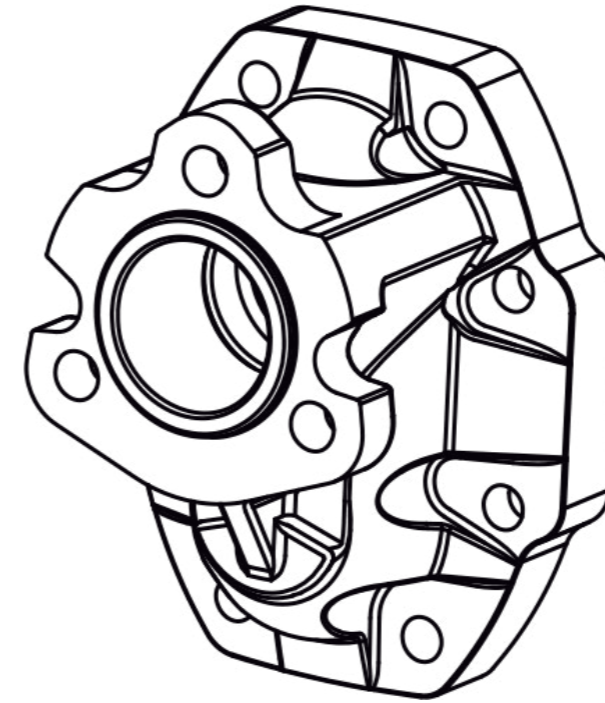
RIGHT ROTATION



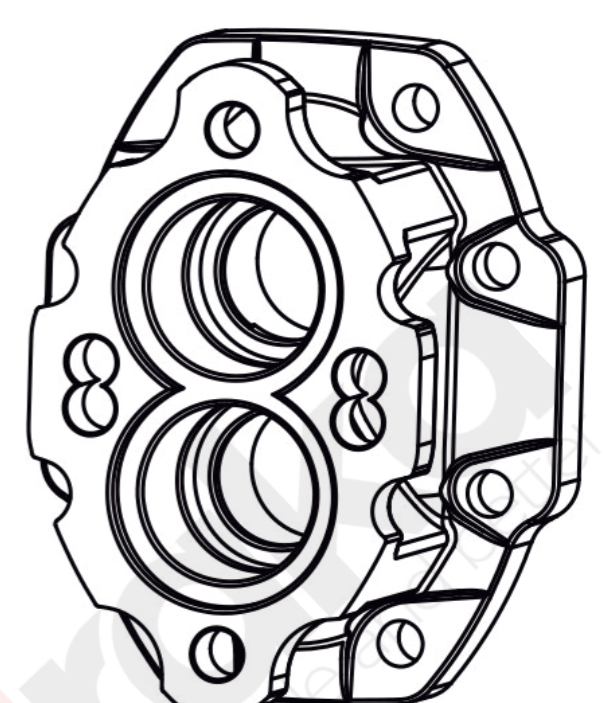
Product out of warranty If do not assembled above.

# SINGLE ROTATION GEAR PUMP CONNECTION TYPES

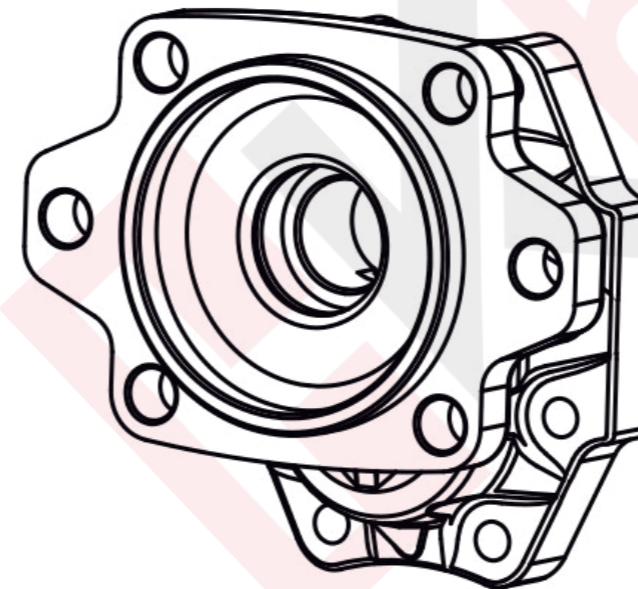
UNI (T1)



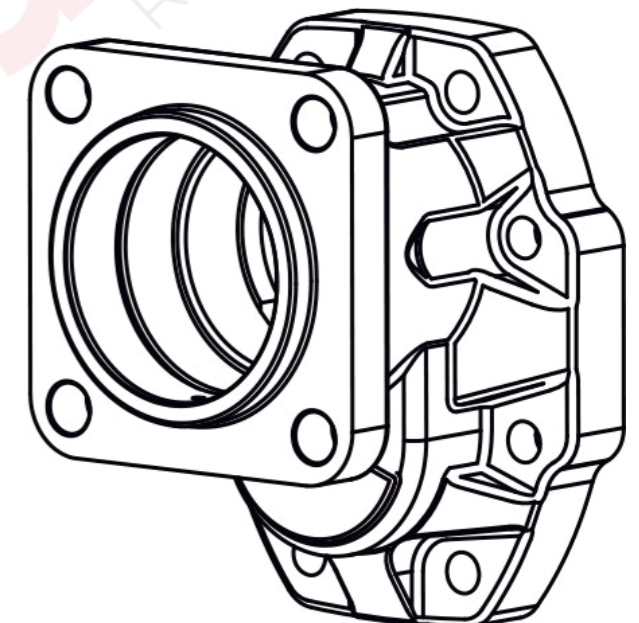
UNI (T2)



SAE (CONCAVE)



ISO (DPAD)



## TORQUE VALUES FOR BOLTS

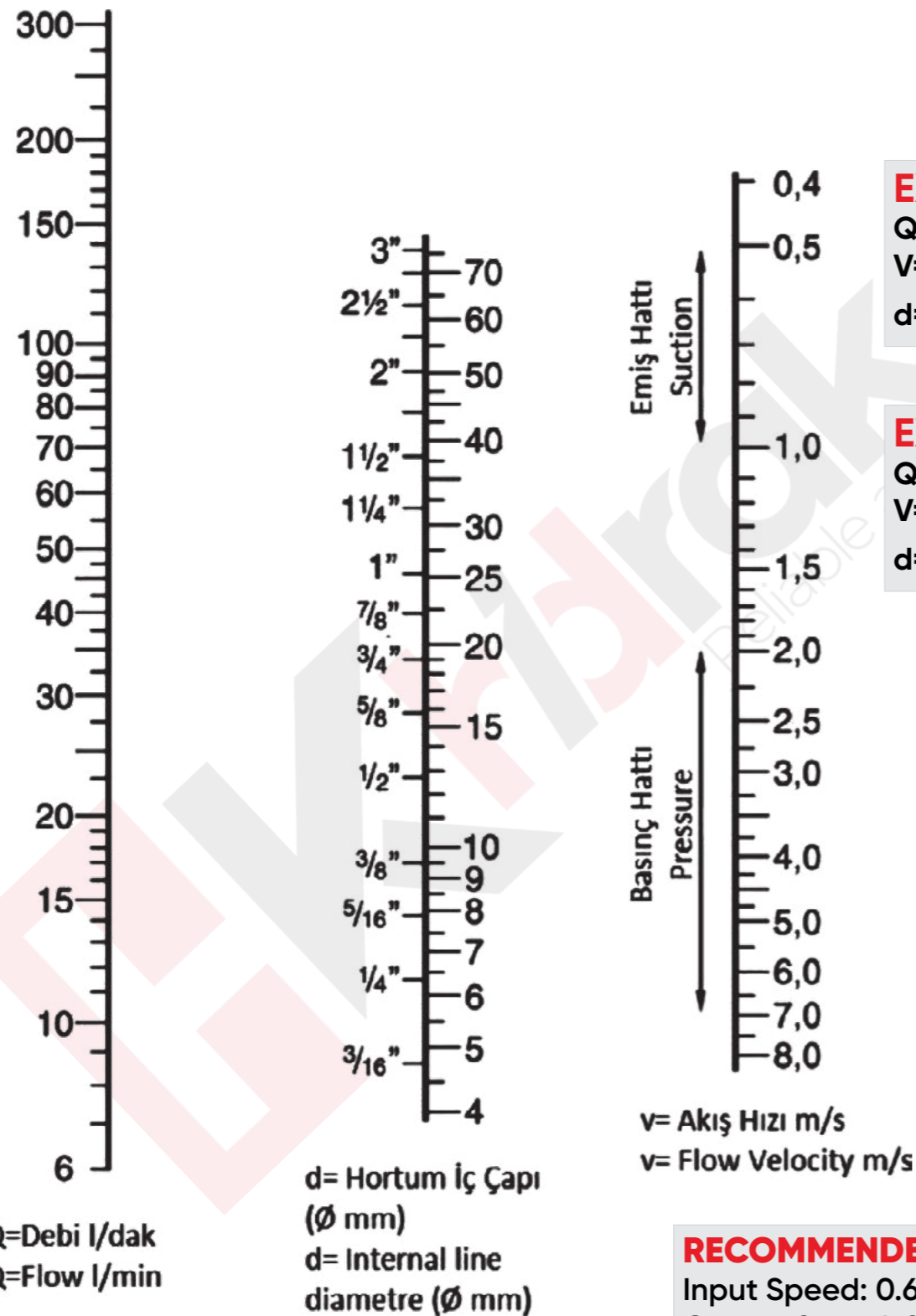
Nominal Diameter (Diameter x Pitch)	8.8		10.9		12.9	
	Kgm.	Nm.	Kgm.	Nm.	Kgm.	Nm.
<b>M4 x 0.7</b>	0.30	3	0.4258	4.2	0.5	5
<b>M5 x 0.8</b>	0.61	6	0.866	8.5	1.03	10.1
<b>M6 x 1</b>	1.42	13	1.63	16	1.73	17
<b>M7</b>	2.34	23	2.85	28	3.16	31
<b>M8 x 1.25</b>	3.36	33	4.07	40	4.48	44
<b>M8 x 1</b>	3.87	38	4.68	46	5.30	52
<b>M10 x 1.5</b>	6.72	66	8.25	81	9.17	90
<b>M10 x 1.25</b>	7.54	74	9.17	90	10.19	100
<b>M10 x 1</b>	8.56	84	10.49	103	11.62	114
<b>M12 x 1.75</b>	8.66	85	12.13	119	14.57	143
<b>M12 x 1.25</b>	9.23	90.6	12.94	127	15.59	153
<b>M14 x 2</b>	3.76	135	19.36	194	23.24	228
<b>M14 x 1.5</b>	14.57	143	20.59	202	24.66	242
<b>M16 x 2</b>	20.89	205	29.35	288	35.27	346
<b>M18 x 2.5</b>	28.84	283	40.57	398	48.72	478
<b>M18 x 1.5</b>	31.39	308	44.24	434	53.00	520
<b>M20 x 2.5</b>	40.77	400	57.28	562	68.70	674
<b>M20 x 1.5</b>	43.93	431	61.87	607	74.20	728
<b>M22 x 2.5</b>	54.23	532	76.24	748	91.43	897
<b>M22 x 1.5</b>	58.20	571	81.85	803	98.26	964
<b>M24 x 3</b>	70.43	691	98.98	971	119.26	1.170
<b>M24 x 2</b>	74.51	731	104.99	1.030	125.38	1.230
<b>M27 x 3</b>	105.95	1.010	144.75	1.420	173.29	1.700
<b>M27 x 2</b>	109.00	1.070	152.90	1.500	183.48	1.800
<b>M30 x 3.5</b>	139.35	1.370	196.73	1.930	235.47	2.310
<b>M30 x 2</b>	150.86	1.480	212.00	2.080	253.82	2.490

## UNION SIZES

PUMP SERIES AND DISPLACEMENT	INLET		OUTLET	
		Ømm.		Ømm.
<b>30-17 SINGLE DIRECTION ISO-UNI</b>	G 1/2"	20,96	G 1/2"	20,96
<b>30-27 SINGLE DIRECTION ISO-UNI</b>	G3/4"	26,44	G3/4"	26,44
<b>30-34 SINGLE DIRECTION ISO-UNI</b>	G3/4"	26,44	G3/4"	26,44
<b>30-43 K TYPE</b>		Ø27		Ø19
<b>30-43 BI-DIRECTIONAL ISO-UNI</b>	G1"	33,25	G3/4"	26,44
<b>30-43 SINGLE DIRECTION ISO-UNI</b>	G1"	33,25	G3/4"	26,44
<b>30-51 K TYPE</b>		Ø27		Ø19
<b>30-51 SINGLE DIRECTION ISO-UNI</b>	G1"	33,25	G1"	33,25
<b>30-51 BI-DIRECTIONAL ISO-UNI</b>	G1"	33,25	G1"	33,25
<b>30-61 K TYPE</b>		Ø27		Ø19
<b>30-61 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>30-61 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G 1"	33,25
<b>30-73 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>30-73 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>30-82 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>30-82 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G 1"	33,25
<b>30-92 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>30-92 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G 1"	33,25
<b>35-90 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1	33,25
<b>35-90 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>35-110 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>35-110 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>40-63 SINGLE DIRECTION ISO-UNI</b>	G 1"	33,25	G3/4"	26,44
<b>40-63 BI-DIRECTIONAL ISO-UNI</b>	G1"	33,25	G 3/4"	26,44
<b>40-73 SINGLE DIRECTION ISO-UNI</b>	G1"	33,25	G1"	26,44
<b>40-73 BI-DIRECTIONAL ISO-UNI</b>	G1"	33,25	G1"	26,44
<b>40-87 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>40-87 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G1	33,25
<b>40-109 SINGLE DIRECTION ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>40-109 BI-DIRECTIONAL ISO-UNI</b>	G1 1/4"	41,91	G1"	33,25
<b>40-133 SINGLE DIRECTION ISO-UM</b>	G1 1/2"	47,8	G1"	33,25
<b>40-133 BI-DIRECTIONAL ISO-UNI</b>	G1 1/2"	47,8	G1"	33,25
<b>40-151 SINGLE DIRECTION ISO-UNI</b>	G1 1/2"	47,8	G1"	33,25
<b>40-151 BI-DIRECTIONAL SO-UNI</b>	G1 1/2"	47,8	G 1"	33,25
<b>30 SERIES MECH.CONT.</b>	G1 1/4"	41,91	G1"	33,25
<b>35SERIES MECH.CONT.</b>	G1 1/4"	41,91	G1"	33,25
<b>40SERIES MECH.CONT.</b>	G1 1/4"	41,91	G1"	33,25
<b>30 SERIES PNEUMATIC CONT.</b>	G1 1/4"	41,91	G1"	33,25
<b>35 SERES PNEUMATIC CONT.</b>	G1 1/4"	41,91	G 1"	33,25
<b>40 SERIES PNEUMATIC CONT.</b>	G1 1/4"	41,91	G1"	33,25
<b>AGRICULTURAL PUMP</b>	G1"	33,25	G1"	33,25

# Nomogram

FLOW - LINE DIMENSION - FLOW VELOCITY



## RECOMMENDED SPEEDS

Input Speed: 0.6-1.2 m/s  
Output Speed: 2.1-4.6 m/s

# Maintenance Instructions

## BEFORE ASSEMBLY

- Please read the instruction manual carefully before using hydraulic gear pump!
- This guide is for use hydraulic gear pump correctly and safely. Therefore, please follow the guidelines and recommendations described in this manual.
- Observe the operating procedures described in these operating instructions. There is a risk of loss of life, injury, damage to the pump and damage to other products.
- With the hydraulic gear pump you have received, there may be a difference between the hydraulic gear pump described in this manual as a result of design change and improvement.
- For information on the hydraulic gear pump you have purchased, please contact us via our communication channels at our website [www.hidraka.com](http://www.hidraka.com)
- Please compare the product code of the hydraulic gear pump you ordered with the product code of the hydraulic gear pump you have received. The product code is printed on the nameplate of the pump.
- Check the suitability of the pump flow rate and pressure and oil requirements of the system.
- The choice of power take-off and pump should be checked to ensure that the direction of rotation
- The inlet and outlet connections of the pump must be determined according to the direction of rotation of the PTO.
- The oil tank must be filled with hydraulic oil by calculating the oil supplement required after all system components are connected.
- Clean the mating surfaces when the pump is connected. Use bolts with appropriate quality and strength values and tighten the bolts to the specified torque values.
- When the vehicle starts, make sure that the pump does not touch the shaft of the vehicle.
- The pump must not be operated without the required amount of oil.

**Do not touch the pump shaft during pump operation.**

# Maintenance Instructions

## WHILE THE PUMP IS WORKING

■ **NOTE:** After the pump is connected and started for the first time, the parts in the hydraulic system will be filled with oil. Therefore, oil level in the tank should be checked and the required amount of oil should be added to the hydraulic tank.

■ **NOTICE:** The pressure control part of the direction control valve used in the hydraulic system should not be changed, the seal should not be broken.

■ The air in the system must be removed before the pump is started.

■ When starting the pump, make sure that there is no pressure in the system.

■ Run at low speed (idling on trucks) for a few minutes while no load, pump operation, sound and oil leaks should be checked. When a non-normal situation is observed (noise, vibration etc.), the causes of these problems should be determined and eliminated.

■ The pump must not be used above the specified speed and pressure.



# Instruction Manual

## FILTRATION

■ The system must have an oil return filter and air filter on the oil tank cap. 10 microns is suitable for efficient filtration. When decide on the filter selection, blasting the filter and considering the high viscosity that may occur during the winter months.

■ **NOTICE:** Do not use suction strainer in suction line. It may cause air bubbles and cavitation in the system.

## HYDRAULIC OIL SELECTION

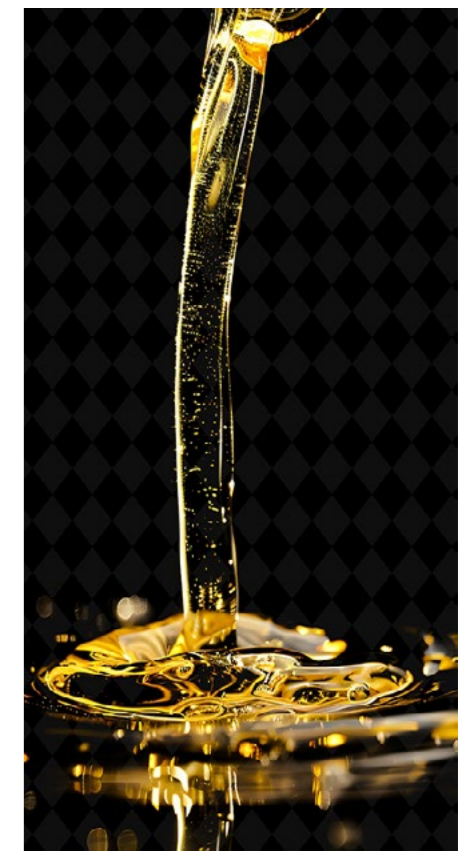
Hydraulic oil type; ISO 46 in summer months, ISO 32 type oil in winter months should be preferred.

Hydraulic oil operating temperature; The required operating temperature in continuous operation is 30 °C - 55 °C. Maximum running temperature 80 °C. Minimum running temperature 20 °C.

The viscosity of the hydraulic oil in the system should be between 20-100 cSt (mm<sup>2</sup> / s). Ideal working viscosity is in the 20-40 cSt (mm<sup>2</sup> / s) range.

Hydraulic oil pollution; Hydraulic oil of type NAS 1638 class 9 must be used.

**No fluid other than hydraulic oil should be used in the system!**





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