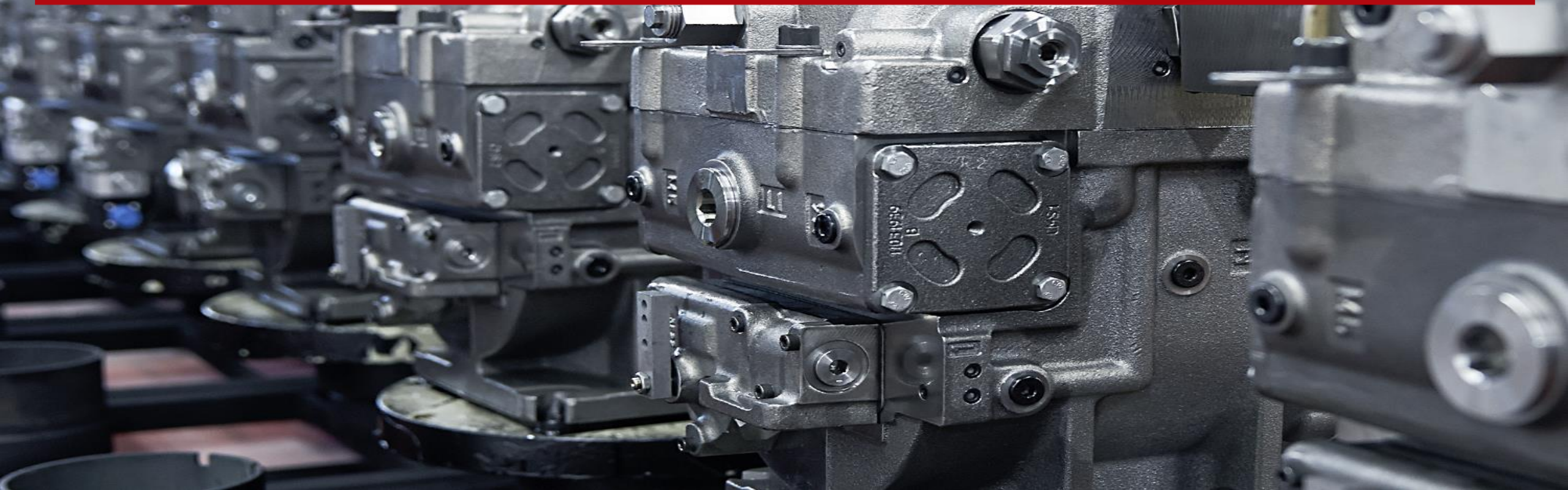
ENGINEERING
TOMORROW

Produktová rada MP1

Miroslav Chmatil

www.powersolutions.danfoss.com



28/32cc

38/45cc

11x male pistons

MP1 Pump – Initial Option Portfolio (IOP)

Feature	Details
Mounting Flange	SAE B, 2 bolt
Input Shafts	13T, 15T, Tapered, Straight Keyed
Charge Pump	None, 9cc, 12cc
Charge Pressure	14-28 Bar options
Filtration	Suction, Remote, External options
Bypass Valve	Available
System Pressure Protection	140-345 Bar options
System Ports	O-ring boss SAE and Metric Split Flange Metric available for 38/45cc
Loop Flushing	Available on 28/32cc
Aux Pad	None, 9T-A w/ cover, 11T-A w/ cover, 13T-B w/ cover, 15T-BB w/ cover (38/45 only)

Physical properties

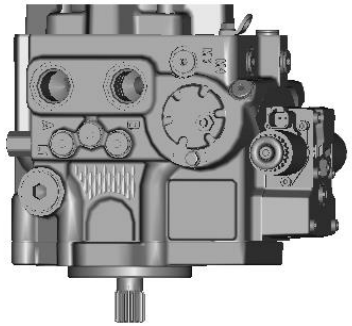
Features	Unit	Size			
		28	32	38	45
Displacement	cm^3	28.0	31.8	38.0	45.1
Weight (dry)	kg	29.6		38	
Minimum Speed (rpm)		500			
Max. Continuous Speed (rpm)		3300-3400			
Max. Speed (rpm)		3900-4000			
Max. Working Pressure (bar)		**350**			
Max. Pressure (bar)		**385**			

Mechanical Displacement Control	IOP
Electronic Displacement Control	IOP
Forward/Neutral/Reverse	IOP
***Hydraulic Displacement Control**	IOP 2
Automotive Control	FOP
NFPE	FOP
NFPH	FOP

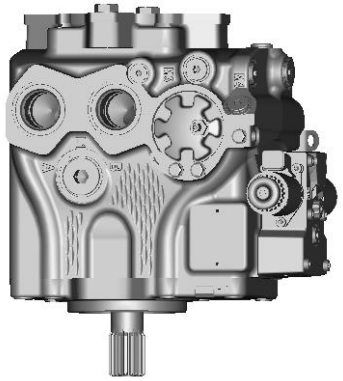
MP1 , pripojenie do obvodu

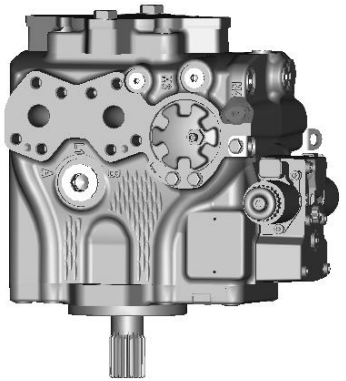
Code	Description	028	032	038	045
A1	O-RING BOSS (INCH)	•	•	•	•
A3	O-RING BOSS (INCH), w/ LPFV	•	•		
B1	SPLIT FLANGE (INCH)			•	•
C1	O-RING BOSS (METRIC)	•	•	•	•
C3	O-RING BOSS (METRIC), w/ LPFV	•	•		
D1	SPLIT FLANGE (METRIC)			•	•

28/32



38/45



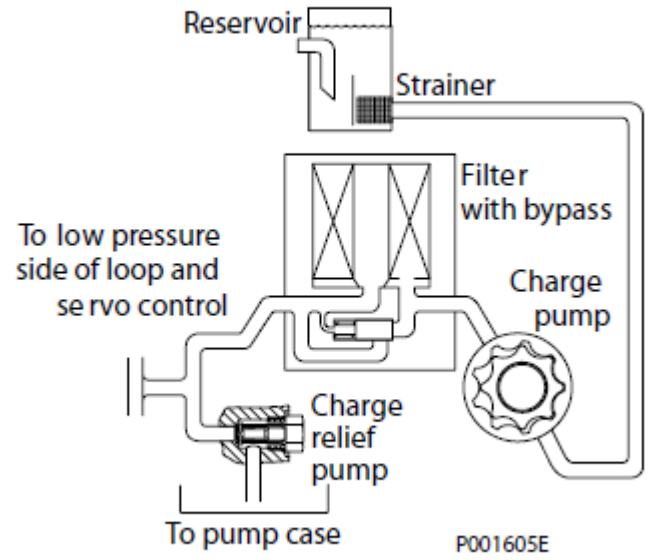


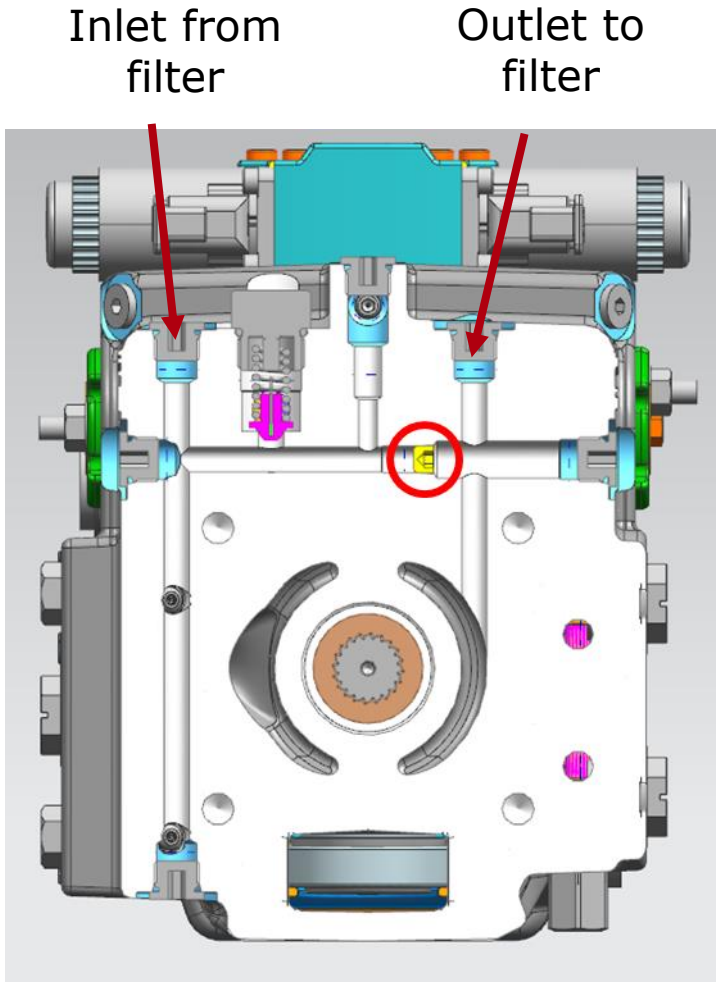
Technical details
MP1 Remote Charge Pressure Filtration

Remote charge pressure full flow filtration

- In a pressure filtration system the pressure filter is remotely mounted in the circuit, downstream of the charge supply.
- This configuration requires pipe plug installation.

Charge pressure filtration, full flow

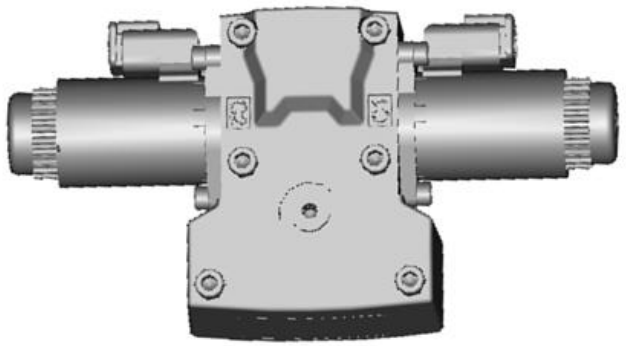




Controls
MP1 FNR Control

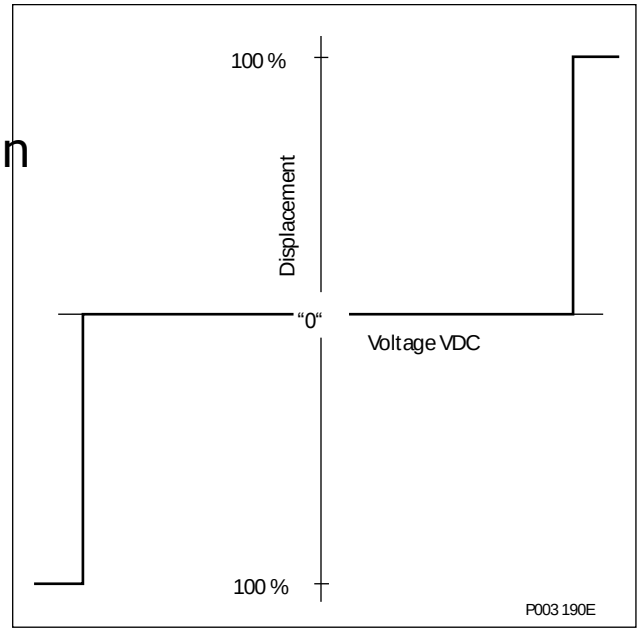
- Forward-Neutral-Reverse (FNR)
- Electric control
- 12V & 24V

The 3-Position (F-N-R) control uses an electric input signal to switch the pump to a full stroke position



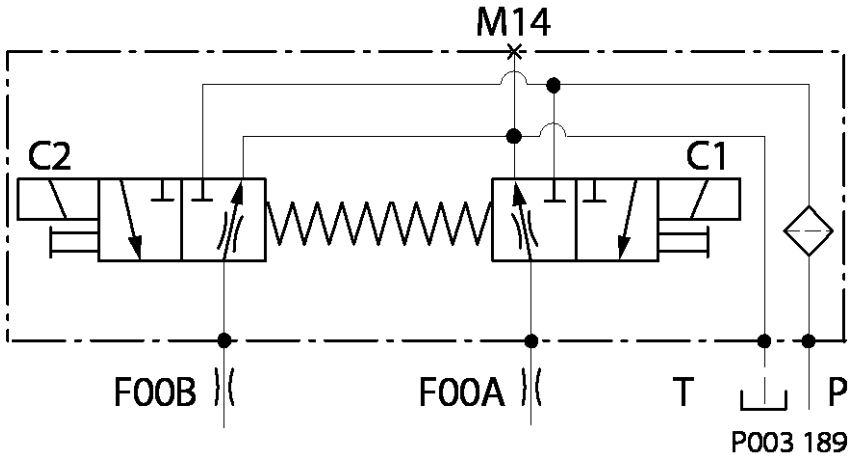
Pump displacement

vs. electrical signal



3 – Position electrical control

hydraulic schematic



Controls
MP1 EDC Control

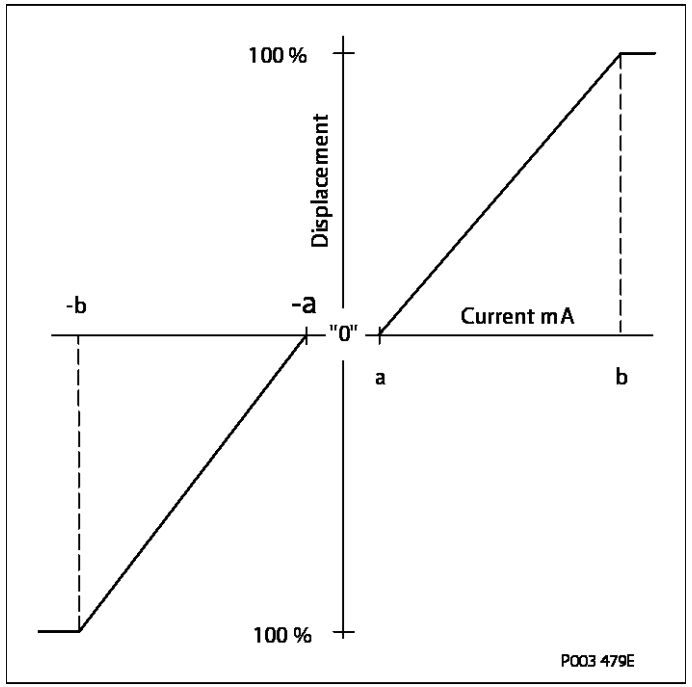
Electric Displacement Control (EDC)

- Features MOR(manual over-ride)
- Available CCO(control cutoff)

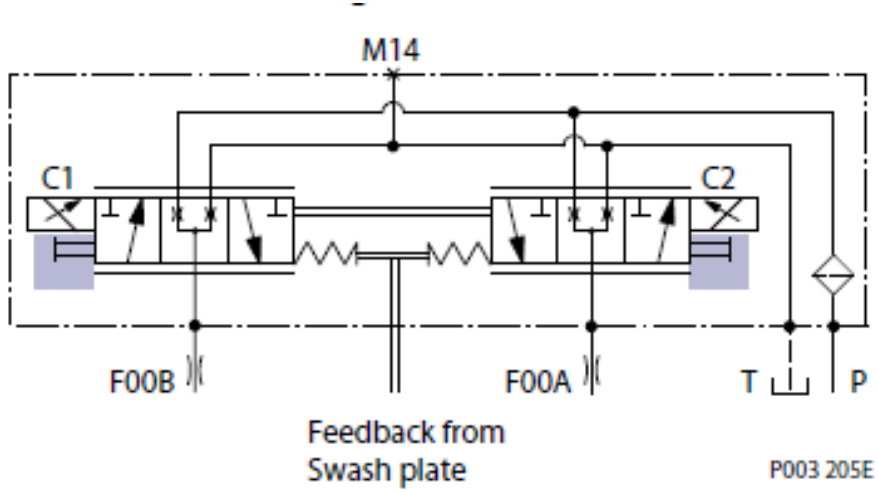
EDC Principle

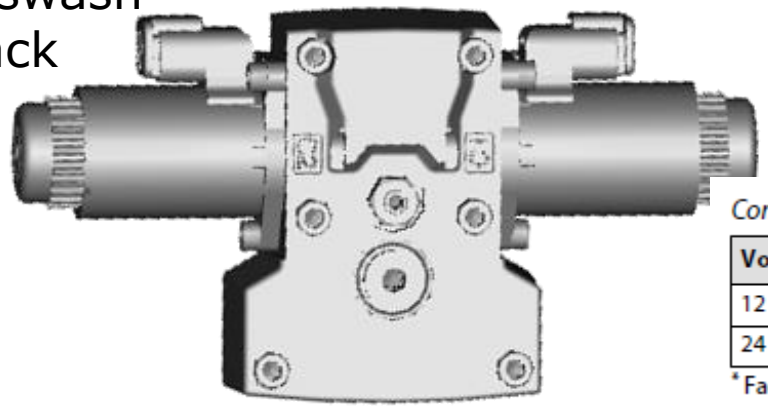
- Pump displacement proportional to input current
- Internal mechanical swash plate position feedback

Pump displacement
vs. control current



EDC w/MOR – Schematic diagram





Control minimum current to stroke pump

Voltage	a*	b	Pin connections
12 V	640 mA	1640 mA	any order
24 V	330 mA	820 mA	

* Factory test current, for vehicle movement or application actuation expect higher or lower value.

Controls
MP1 MDC Control

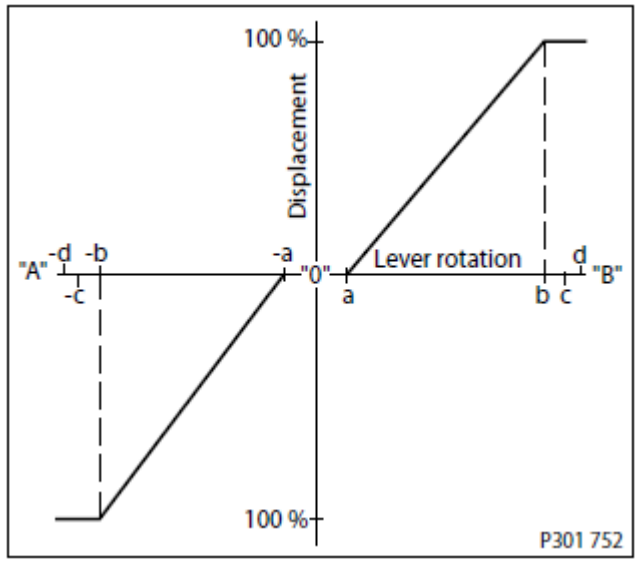
Manual Displacement Control (MDC)

- Available Neutral Start Switch (NSS)
- Available control handle

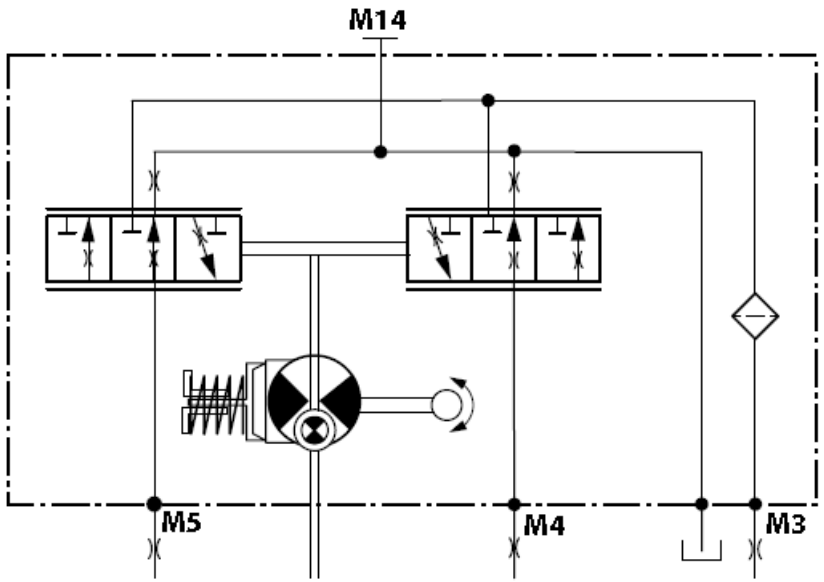
MDC Principle

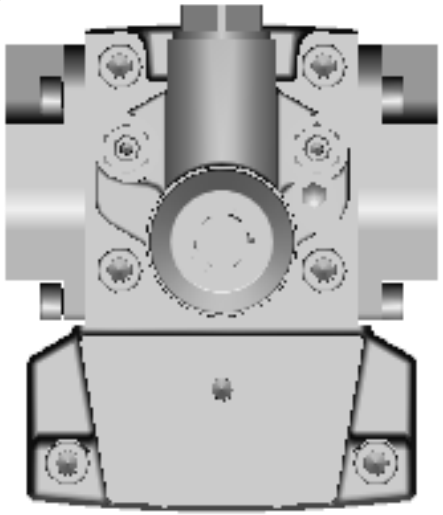
- Pump displacement proportional to input angle of control leveler
- Internal mechanical swash plate position feedback

Pump displacement
vs. lever rotation



MDC – Schematic diagram

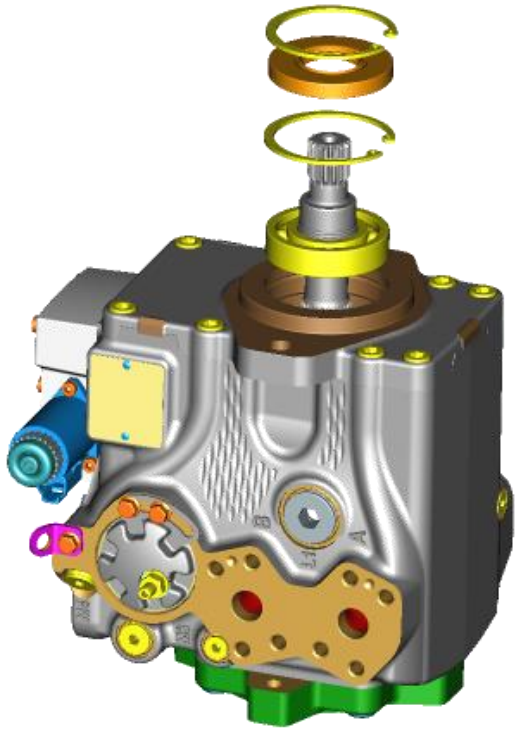




Where:

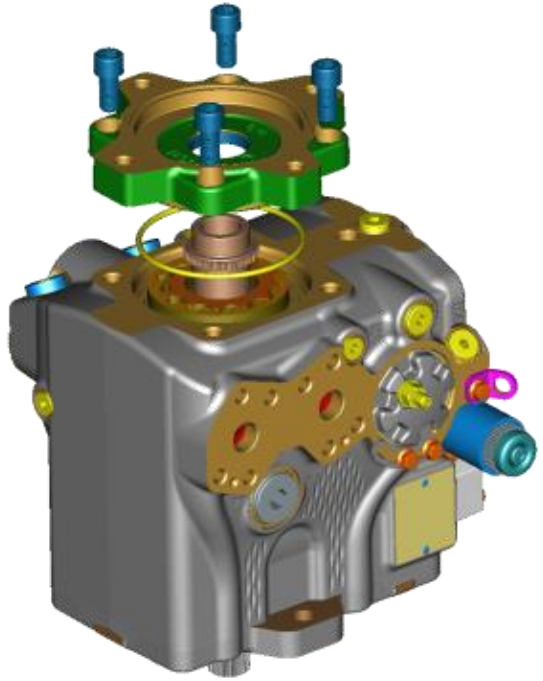
Deadband on **B** side – **a** = 3° ±1°
Maximum pump stroke – **b** = 30° +2/-1°
Required customer end stop – **c** = 36° ±3°
Internal end stop – **d** = 40°

Shaft Conversion



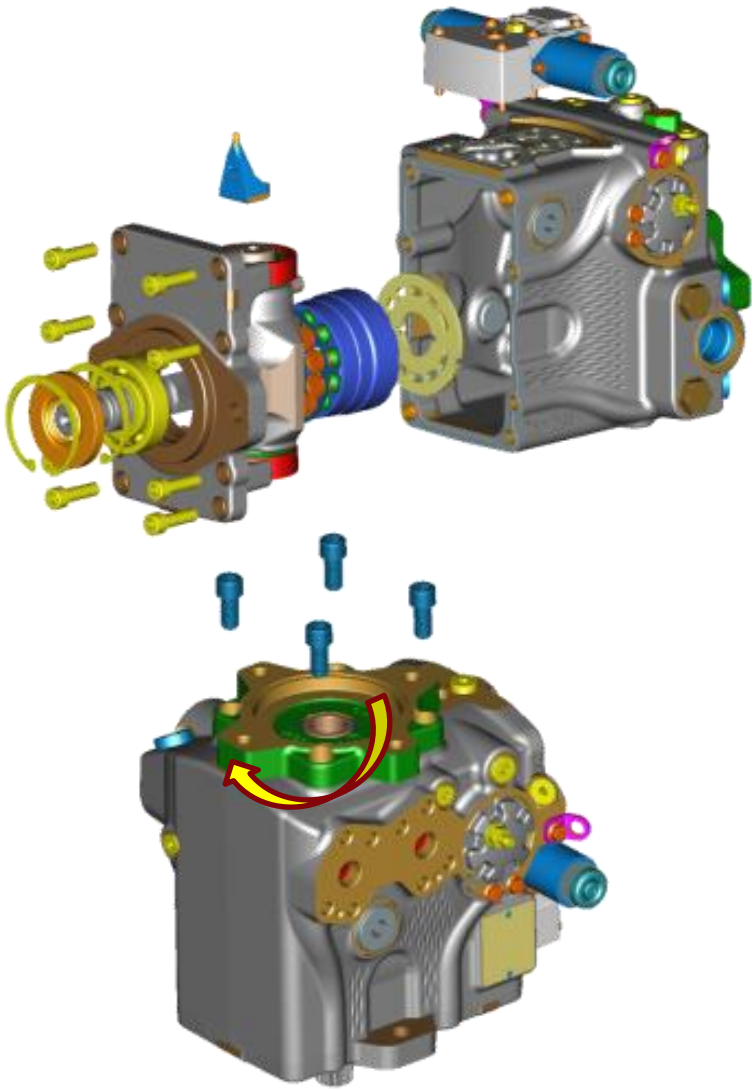
All base pumps sold with ***15T shaft***. Distributor can easily convert to other shafts (13T, tapered, straight key) as needed

Auxiliary Pad, Charge Pump and Coupling Conversion



All base models will be shipped with ***no charge pump or auxiliary pad***. Distributors will be able to install desired charge pump and auxiliary pad at final assembly.

Rotation Conversion



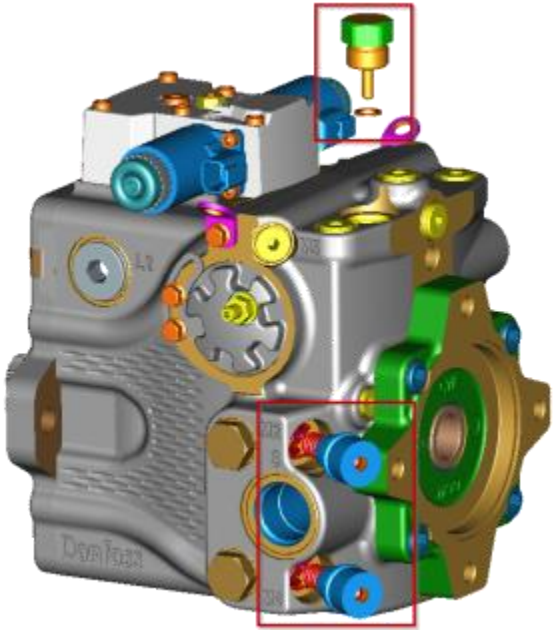
1 part

Only a valveplate is needed to change rotation of the pump – reduced inventory

Base pumps will include option to select either ***CW or CCW*** prior to shipment.

HPRV and CPRV Setting Conversion

CPRV



HPRV

Base model will be preset to the following: ***HPRV – 345bar, CPRV – 24bar***. Distributor will be able adjust as needed for final assembly.

L/K Motors – basic information about the product

Series K/L Motor

LC/KC (cartridge)

LV/KV (SAE-B)

Reverse Diplacement Motor

			Size				
			L25cc	L30cc	L35cc	K38cc	K45cc
System Pressure	bar	Max. working pressure	400	350	300	350	300
		Maximum *(recommended)*	420	375	325	375	325