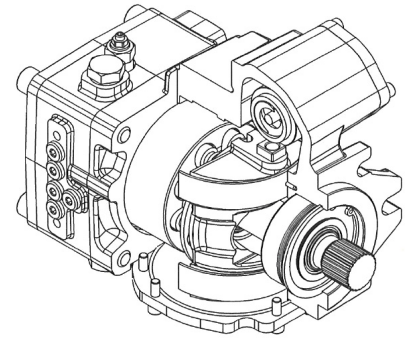


B19: 'HPP8' AXIAL PISTON PUMPS

DISPLACEMENT	cc/REV	82	100	125
BOOST PUMP DISPLACEMENT	cc/REV	25		
MOUNT	SAE 'C' 4 BOLT			
BOOST PUMP PRESSURE (SET 20 BAR)	BAR	15 - 30		
MAX SPEED	RPM	4000		
MIN SPEED	RPM	500		
MAX CONTINUOUS PRESSURE	BAR	400		
INTERMITTENT PRESSURE	BAR	420		
MAX HOUSING PRESSURE	BAR	2 BAR		
MAX CONTINUOUS TEMPERATURE	°C	90		

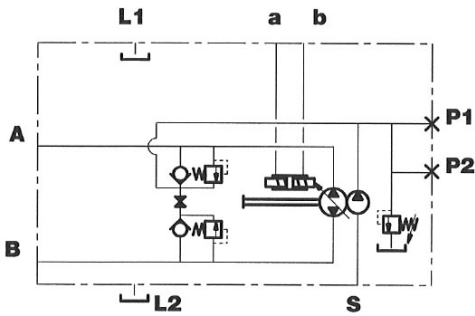


STANDARD FEATURES

MANUAL STROKE ADJUSTMENT
CROSS PORT RELIEF VALVES
BOOST PUMP C/W RELIEF
BYPASS VALVE

BOLT ON OPTIONS

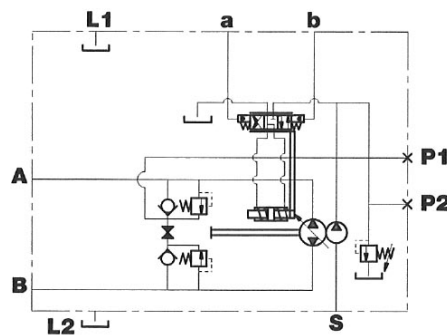
BOOST PRESSURE FILTER
PRESSURE OVERRIDE / CUTOFF
PURGE / LOOP FLUSHING VALVE
SWASHPLATE RAMP CONTROL SP
SAEA 5/8" 9T, SAE 7/8" 13T, SAEC THROUGH DRIVE



"K"

HYDRAULIC PILOT

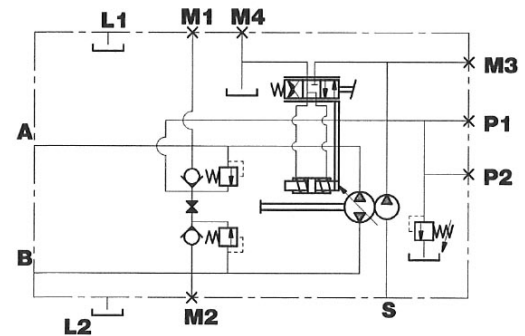
Displacement is proportional to the external pilot pressure



"G"

HYDRAULIC PILOT WITH FEEDBACK

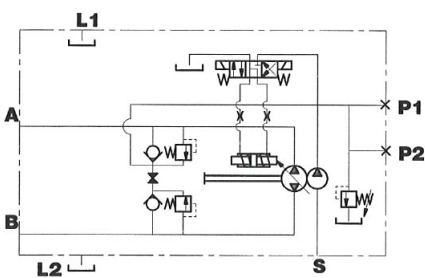
'G' - As 'K' with mechanical feedback



"I"

LEVER OPERATED SERVO

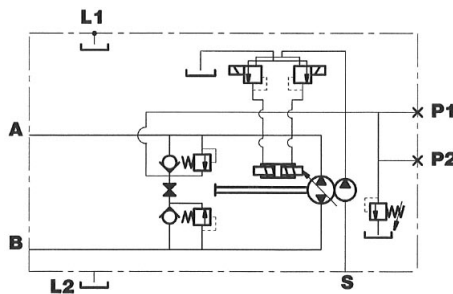
Displacement varied by rotating the lever 26° either side of centre



"N" [12VDC] & "Q" [24VDC]

SOLENOID CONTROL

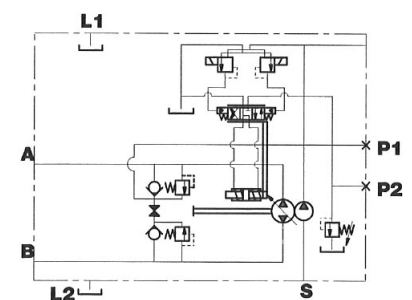
Cetop 3 Control [12 or 24 VDC]
Max displacement when solenoid is energised



"S"

ELECTRONIC PROPORTIONAL

Displacement is proportional to the control current



"O"

ELECTRONIC PROPORTIONAL

As "S" with mechanical feedback

B15: 'M4PV' AXIAL PISTON PUMPS

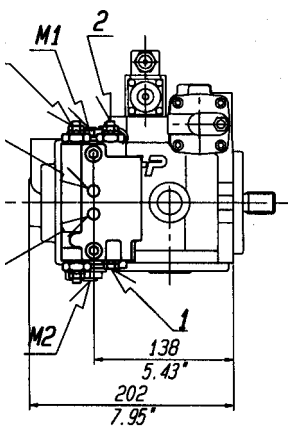
DISPLACEMENT	cc/REV	21	28
BOOST PUMP DISPLACEMENT	cc/REV	9	
MOUNT	SAE 'B' 2 BOLT		
BOOST PUMP PRESSURE (SET 20 BAR)	BAR	15 - 30	
MAX SPEED	RPM	3600	
MIN SPEED	RPM	500	
MAX CONTINUOUS PRESSURE	BAR	250	
INTERMITTENT PRESSURE	BAR	350	
MAX HOUSING PRESSURE	BAR	1.5	
MAX CONTINUOUS TEMPERATURE	°C	80	

STANDARD FEATURES

- MANUAL STROKE ADJUSTMENT
- CROSS PORT RELIEF VALVES
- BOOST PUMP CW RELIEF
- BYPASS VALVE

BOLT ON OPTIONS

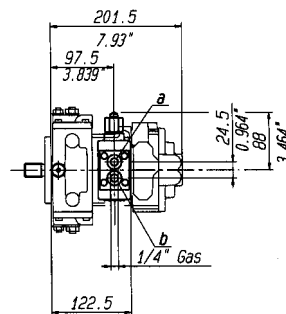
- BOOST PRESSURE FILTER
- PRESSURE OVERRIDE / CUTOFF
- PURGE / LOOP FLUSHING VALVE
- SWASHPLATE RAMP CONTROL SPOOLS
- SAEA 5/8" 9T or SAEB 7/8" 13T THROUGH DRIVE



'D'

AUTOMOTIVE CONTROL

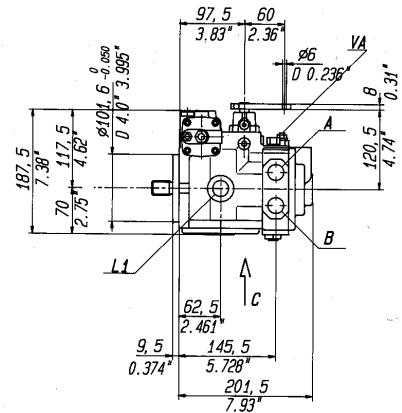
Varies the pump displacement proportional to engine rpm



'G' & 'K'

HYDRAULIC PILOT

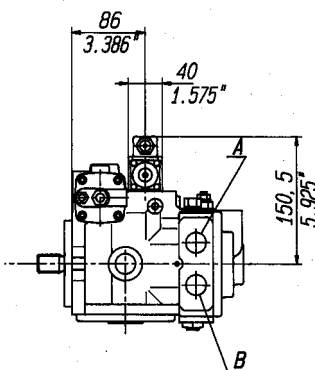
K - Displacement is proportional to the external pilot pressure signal.
G - As 'K' with mechanical feedback



'I'

LEVER OPERATED SERVO

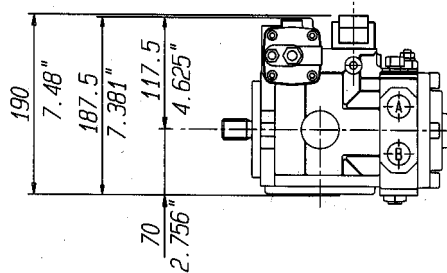
Displacement varied by rotating the lever 26° either side of centre



'N' (12VDC) & 'Q' (24VDC)

SOLENOID CONTROL

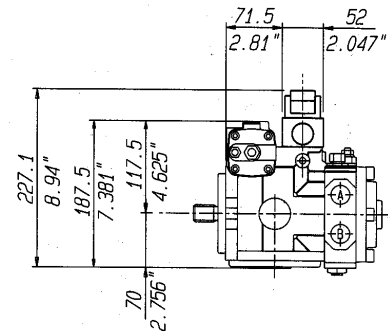
Cetop 3 Control (12 or 24 VDC)
Max displacement when solenoid is energised



'S'

ELECTRONIC PROPORTIONAL

Displacement is proportional to the control current.



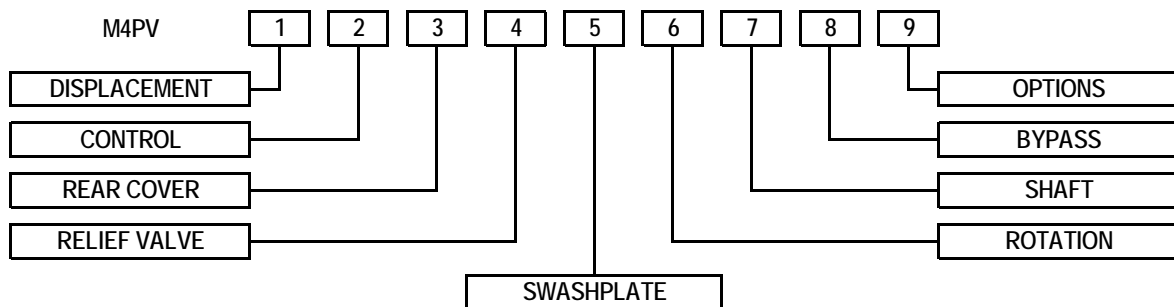
'T'

ELECTRONIC PROPORTIONAL

As 'S' with mechanical feedback

B16: 'M4PV' AXIAL PISTON PUMPS

HOW TO ORDER



1	<u>DISPLACEMENT</u>	<u>CODE</u>	5	<u>SWASHPLATE MOUNT</u>	<u>CODE</u>
	cc/REV			Mounted on Needle Bearings	A
	21	21		Mounted on Bronze Bushes	B
2	<u>CONTROL</u>	<u>CODE</u>	6	<u>ROTATION</u>	<u>CODE</u>
	Hydraulic Pilot with Feedback	G		Clockwise	R
	Hydraulic Pilot	K		Anti Clockwise	L
	Lever Operated Servo	I	7	<u>SHAFT</u>	<u>CODE</u>
	Solenoid - 12VDC	N		7/8" Keyed	1
	Solenoid - 24VDC	Q		1.0" 15 tooth Splined	3
**	Electronic Proportional	S		7/8" 13 tooth Splined	6
**	Electronic Proportional with Feedback	T	8	<u>BYPASS VALVE</u>	<u>CODE</u>
**	<i>Proportional Amplifiers also available</i>			Bypass Valve	B
3	<u>REAR COVER</u>	<u>CODE</u>	9	<u>OPTIONS</u>	<u>CODE</u>
	Plain end cover c/w boost pump	1		Automotive ('N' or 'Q' Control)	D
	SAE 'A' 2 Bolt mount c/w boost pump	2		- Hydraulic Inching ('D' Control)	H
	SAE 'B' 2 Bolt mount c/w boost pump	3		- Mechanical Inching ('D' Control)	M
	SAE 'A' 2 Bolt mount NO boost pump	5		Purge Valve	V
	SAE 'B' Low Flange NO boost Pump	7		Pressure Override / Cutoff	W
4	<u>RELIEF VALVES</u>	<u>CODE</u>		Filter on Boost pump	Y
	140 bar	14	<i>MULTIPLE SELECTIONS CAN BE MADE</i>		
	175 Bar	17			
	210 Bar	21			
	250 Bar	25			
	300 Bar	30			
	350 Bar	35			

B17: 'M4PV' AXIAL PISTON PUMPS

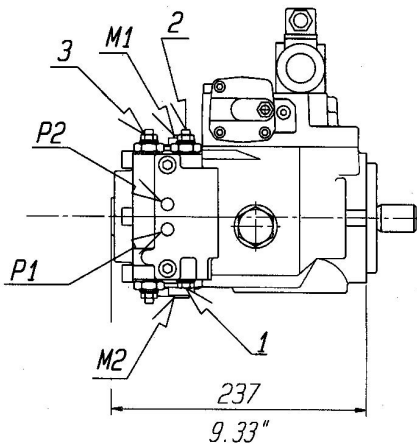
DISPLACEMENT	cc/REV	34	46	50	58	65
BOOST PUMP DISPLACEMENT	cc/REV	13				
MOUNT		SAE 'B' 2 BOLT				
BOOST PUMP PRESSURE (SET 20 BAR)	BAR	15 - 30				
MAX SPEED	RPM	3000				
MIN SPEED	RPM	500				
MAX CONTINUOUS PRESSURE	BAR	250				
INTERMITTENT PRESSURE	BAR	400				
MAX HOUSING PRESSURE	BAR	1.5				
MAX CONTINUOUS TEMPERATURE	°C	80				

STANDARD FEATURES

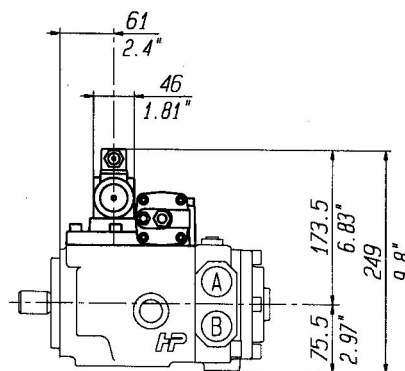
- MANUAL STROKE ADJUSTMENT
- CROSS PORT RELIEF VALVES
- BOOST PUMP C/W RELIEF
- BYPASS VALVE

BOLT ON OPTIONS

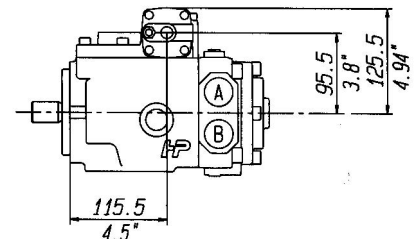
- BOOST PRESSURE FILTER
- PRESSURE OVERRIDE / CUTOFF
- PURGE / LOOP FLUSHING VALVE
- SWASHPLATE RAMP CONTROL SPOOLS
- SAE 5/8" 9T OR SAEB 7/8" 13T THROUGH DRIVE



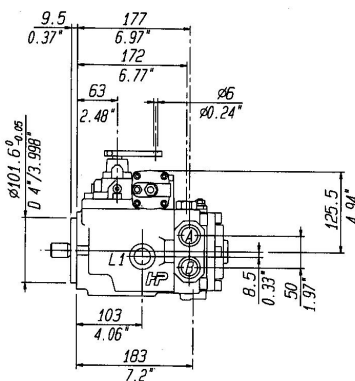
'D'
AUTOMOTIVE CONTROL
Varies the pump displacement
proportional to engine rpm



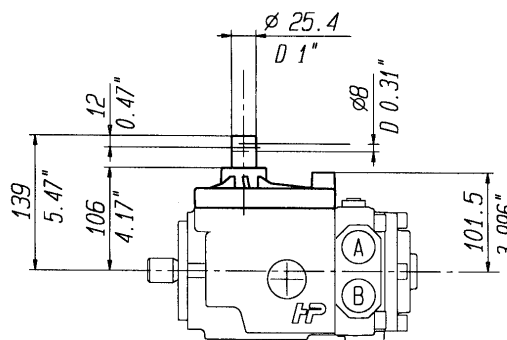
'N' (12VDC) & 'O' (24VDC)
SOLENOID CONTROL
Cetop 3 Control (12 or 24 VDC)
Max displacement when
solenoid is energised



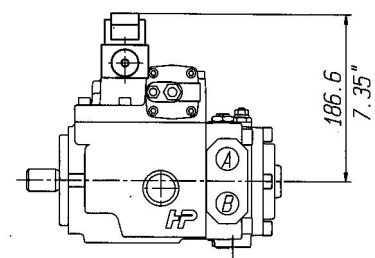
'G' & 'K'
HYDRAULIC PILOT
K - Displacement is proportional to the
external pilot pressure signal.
G - As 'K' with mechanical feedback



'I'
LEVER OPERATED SERVO
Displacement varied by rotating the
lever 260 either side of centre



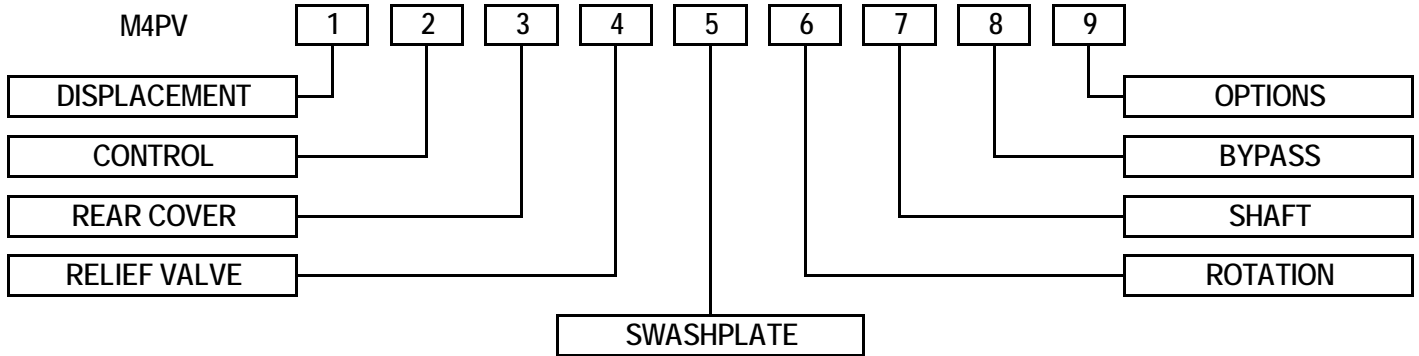
'M'
MANUAL LEVER
Displacement varied by rotating the
control lever which is directly
coupled to the swashplate



'S' & 'T'
ELECTRONIC PROPORTIONAL
'S' - Displacement is proportional to
the control current.
'T' - As 'S' with mechanical feedback

B18: 'M4PV' AXIAL PISTON PUMPS

HOW TO ORDER

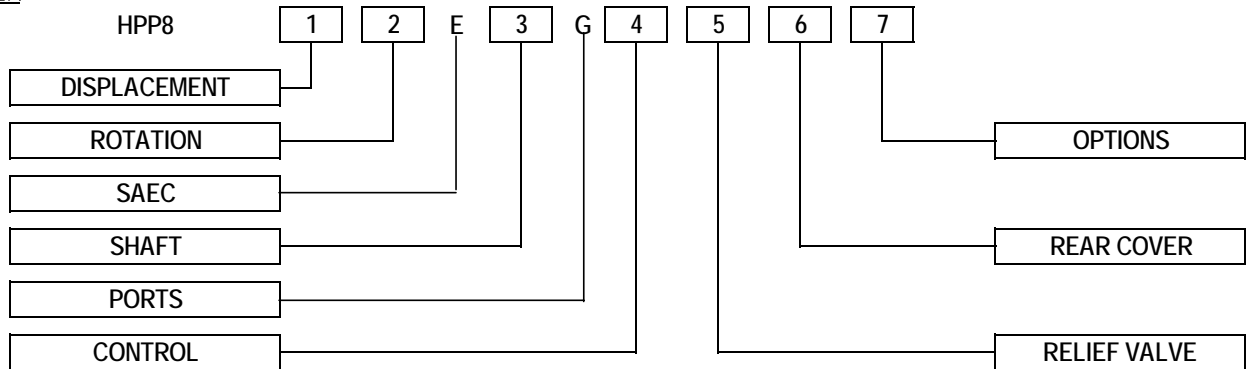


1	DISPLACEMENT	CODE	5	SWASHPLATE MOUNT	CODE
	cc/REV			Mounted on Needle Bearings	A [Standard]
	34	34		Mounted on Bronze Bushes	B ['M' Cont.]
	46	46	6	ROTATION	CODE
	50	50		Clockwise	R
	58	58		Anti Clockwise	L
	65	65	7	SHAFT	CODE
2	CONTROL	CODE		7/8" Keyed	1
	Hydraulic Pilot with Feedback	G		1.0" Keyed	2
	Hydraulic Pilot	K		1.0" 15 tooth Splined	3
	Lever Operated Servo	I		30mm Keyed	4
	Manual (ratio 1:2)	M		7/8" 13 tooth Female Splined	5
	Solenoid - 12VDC	N		7/8" 13 tooth Splined	6
	Solenoid - 24VDC	Q	8	BYPASS VALVE	
**	Proportional Control	S		Bypass Valve	B
**	Proportional Control c/w feedback	T	9	OPTIONS	CODE
**	<i>Proportional Amplifiers also available</i>			Automotive ('N' or 'Q' control)	D
3	REAR COVER	CODE		- Hydraulic Inching ('D' Control)	H
	Plain end cover c/w boost pump	1		- Mechanical Inching ('D' Control)	M
	SAE 'A' 2 Bolt mount c/w boost pump	2		Purge Valve	V
	SAE 'B' 2 Bolt mount c/w boost pump	3		Pressure Override / Cutoff	W
	SAE 'A' 2 Bolt mount NO boost pump	5		Filter on Boost pump	Y
	SAE 'B' Low FLange NO boost pump	7			
4	RELIEF VALVES	CODE			
	140 bar	14			
	175 Bar	17			
	210 Bar	21			
	250 Bar	25			
	300 Bar	30			
	350 Bar	35			
	400 Bar	40			

MULTIPLE SELECTIONS CAN BE MADE

B20: 'HPP8' AXIAL PISTON PUMPS

HOW TO ORDER



1	DISPLACEMENT	CODE	5	RELIEF VALVES	CODE
	cc/REV			280 Bar	I
	82	82		300 Bar	L
	100	100		350 Bar	O
	125	125		400 Bar	P
2	ROTATION	CODE		420 Bar	Q
	Clockwise	R		450 Bar	R
	Anti Clockwise	L			
3	SHAFT	CODE	6	REAR COVER	CODE
	14 tooth Splined	3		Plain end cover c/w boost pump	1
	21 tooth Splined	7		SAE 'A' 2 Bolt mount c/w boost pump	2
	23 tooth Splined	8		SAE 'B' 2 Bolt mount c/w boost pump	3
				SAE 'C' 4 Bolt mount c/w boost pump	4
4	CONTROL	CODE	7	OPTIONS	CODE
	Hydraulic Pilot c/w Feedback	G		Purge Valve	V
	Hydraulic Pilot	K		Power Limiter	W
	Lever Operated Servo	I		Filter on Boost Pump c/w	
	Solenoid 12VDC	N		Clogging Indicator	X
	Solenoid 24VDC	Q			
**	Proportional Control	S		MULTIPLE SELECTIONS CAN BE MADE	
**	Proportional Control c/w feedback	O		Other options are also available upon request.	

B17: 'M4PV' AXIAL PISTON PUMPS

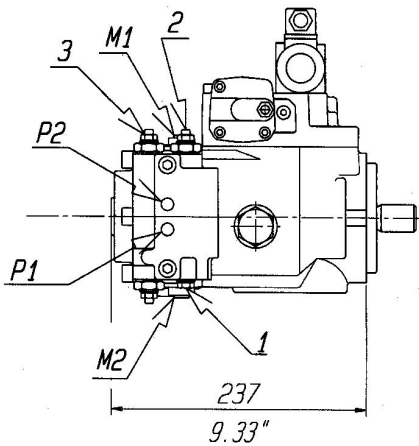
DISPLACEMENT	cc/REV	34	46	50	58	65
BOOST PUMP DISPLACEMENT	cc/REV	13				
MOUNT		SAE 'B' 2 BOLT				
BOOST PUMP PRESSURE (SET 20 BAR)	BAR	15 - 30				
MAX SPEED	RPM	3000				
MIN SPEED	RPM	500				
MAX CONTINUOUS PRESSURE	BAR	250				
INTERMITTENT PRESSURE	BAR	400				
MAX HOUSING PRESSURE	BAR	1.5				
MAX CONTINUOUS TEMPERATURE	°C	80				

STANDARD FEATURES

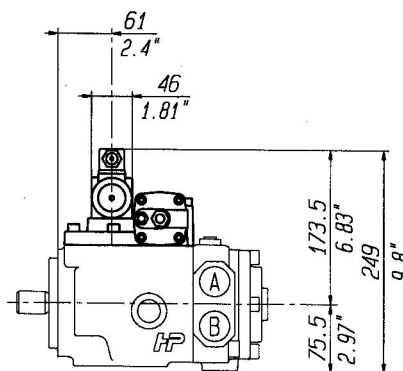
- MANUAL STROKE ADJUSTMENT
- CROSS PORT RELIEF VALVES
- BOOST PUMP C/W RELIEF
- BYPASS VALVE

BOLT ON OPTIONS

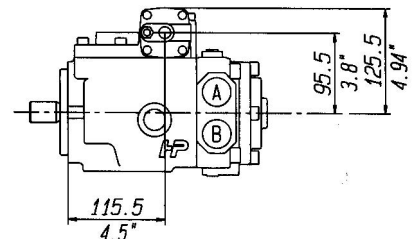
- BOOST PRESSURE FILTER
- PRESSURE OVERRIDE / CUTOFF
- PURGE / LOOP FLUSHING VALVE
- SWASHPLATE RAMP CONTROL SPOOLS
- SAE 5/8" 9T OR SAE 7/8" 13T THROUGH DRIVE



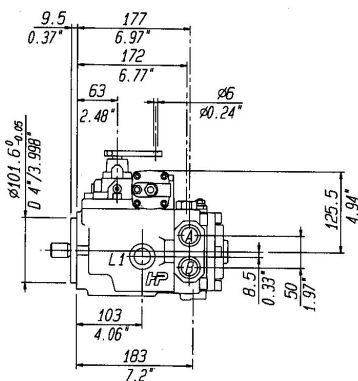
'D'
AUTOMOTIVE CONTROL
Varies the pump displacement
proportional to engine rpm



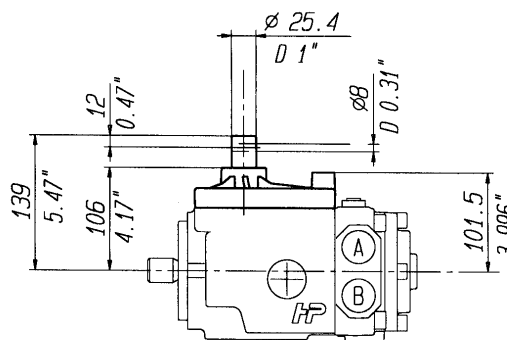
'N' (12VDC) & 'O' (24VDC)
SOLENOID CONTROL
Cetop 3 Control (12 or 24 VDC)
Max displacement when
solenoid is energised



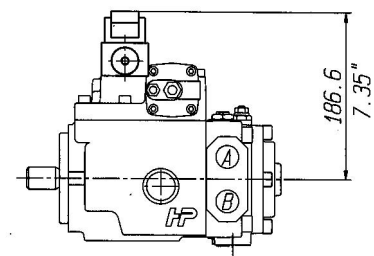
'G' & 'K'
HYDRAULIC PILOT
K - Displacement is proportional to the
external pilot pressure signal.
G - As 'K' with mechanical feedback



'I'
LEVER OPERATED SERVO
Displacement varied by rotating the
lever 260 either side of centre



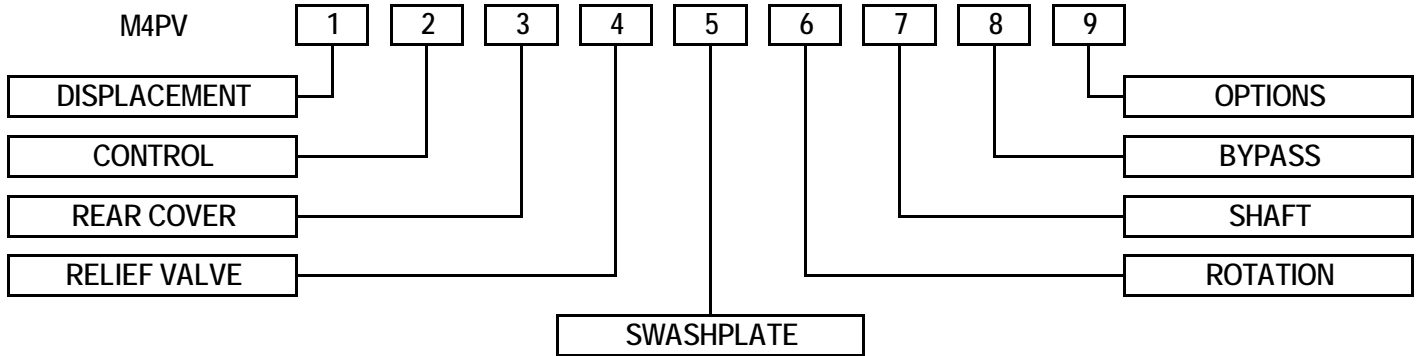
'M'
MANUAL LEVER
Displacement varied by rotating the
control lever which is directly
coupled to the swashplate



'S' & 'T'
ELECTRONIC PROPORTIONAL
'S' - Displacement is proportional to
the control current.
'T' - As 'S' with mechanical feedback

B18: 'M4PV' AXIAL PISTON PUMPS

HOW TO ORDER



1	DISPLACEMENT	CODE	5	SWASHPLATE MOUNT	CODE
	cc/REV			Mounted on Needle Bearings	A [Standard]
	34	34		Mounted on Bronze Bushes	B ['M' Cont.]
	46	46	6	ROTATION	CODE
	50	50		Clockwise	R
	58	58		Anti Clockwise	L
	65	65	7	SHAFT	CODE
2	CONTROL	CODE		7/8" Keyed	1
	Hydraulic Pilot with Feedback	G		1.0" Keyed	2
	Hydraulic Pilot	K		1.0" 15 tooth Splined	3
	Lever Operated Servo	I		30mm Keyed	4
	Manual (ratio 1:2)	M		7/8" 13 tooth Female Splined	5
	Solenoid - 12VDC	N		7/8" 13 tooth Splined	6
	Solenoid - 24VDC	Q	8	BYPASS VALVE	
**	Proportional Control	S		Bypass Valve	B
**	Proportional Control c/w feedback	T	9	OPTIONS	CODE
**	<i>Proportional Amplifiers also available</i>			Automotive ('N' or 'Q' control)	D
3	REAR COVER	CODE		- Hydraulic Inching ('D' Control)	H
	Plain end cover c/w boost pump	1		- Mechanical Inching ('D' Control)	M
	SAE 'A' 2 Bolt mount c/w boost pump	2		Purge Valve	V
	SAE 'B' 2 Bolt mount c/w boost pump	3		Pressure Override / Cutoff	W
	SAE 'A' 2 Bolt mount NO boost pump	5		Filter on Boost pump	Y
	SAE 'B' Low FLange NO boost pump	7			
4	RELIEF VALVES	CODE			
	140 bar	14			
	175 Bar	17			
	210 Bar	21			
	250 Bar	25			
	300 Bar	30			
	350 Bar	35			
	400 Bar	40			

MULTIPLE SELECTIONS CAN BE MADE