

# TDV100

## DIRECTIONAL PROPORTIONAL SECTIONAL VALVE WITH LOAD SENSE

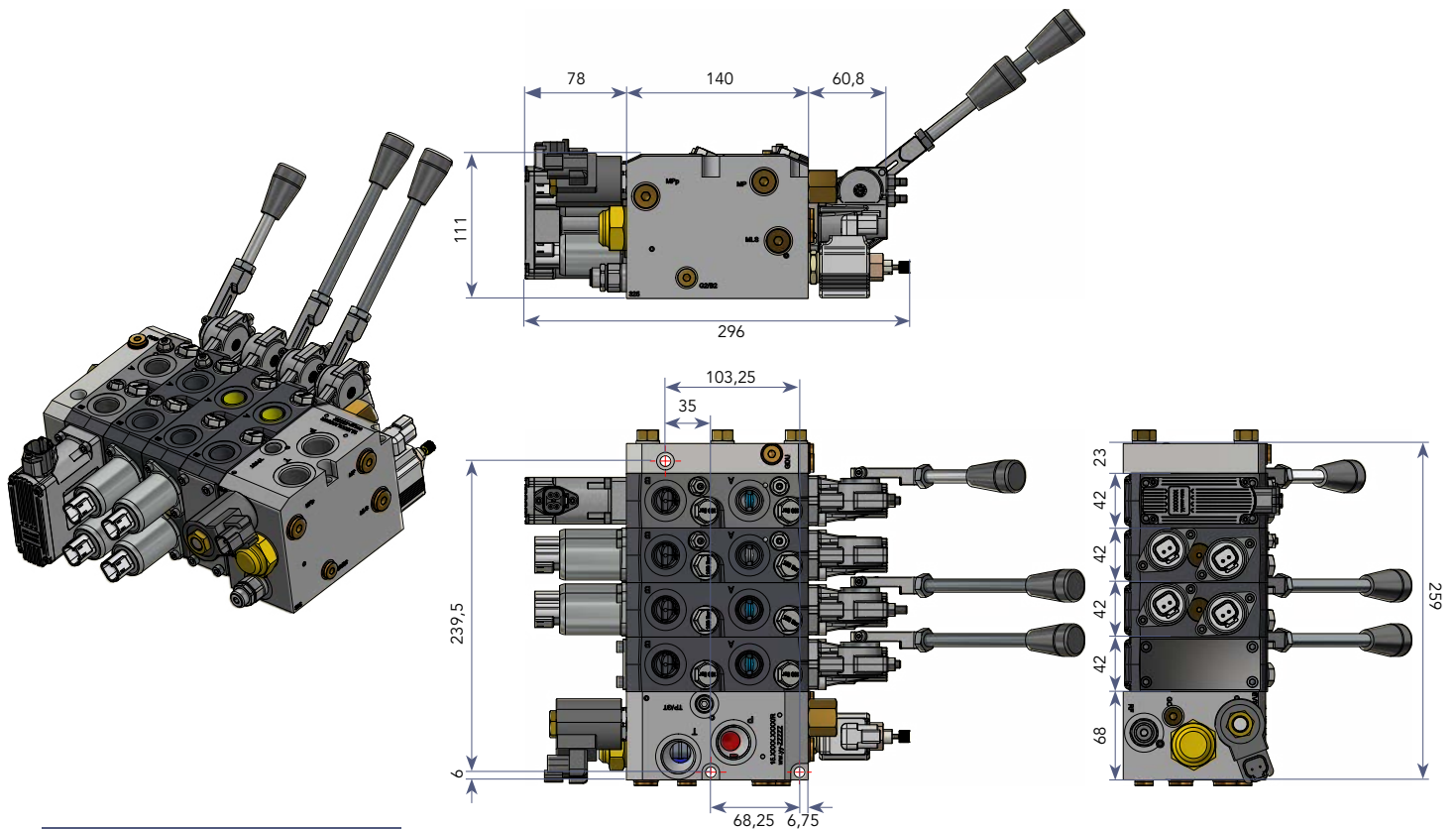
### STACKABLE DIRECTIONAL CONTROL VALVE SYSTEM

The **TDV100** is a closed center, load sensing, sectional control valve with pre-compensation. The **TDV100** can be configured with 1 to 10 working sections and can be used either with fixed displacement or with pressure/flow compensated variable displacement pumps. When multiple functions are selected, the **TDV100** will automatically resolve the highest function load pressure which is then transmitted to the pump or inlet unloader/by-pass compensator

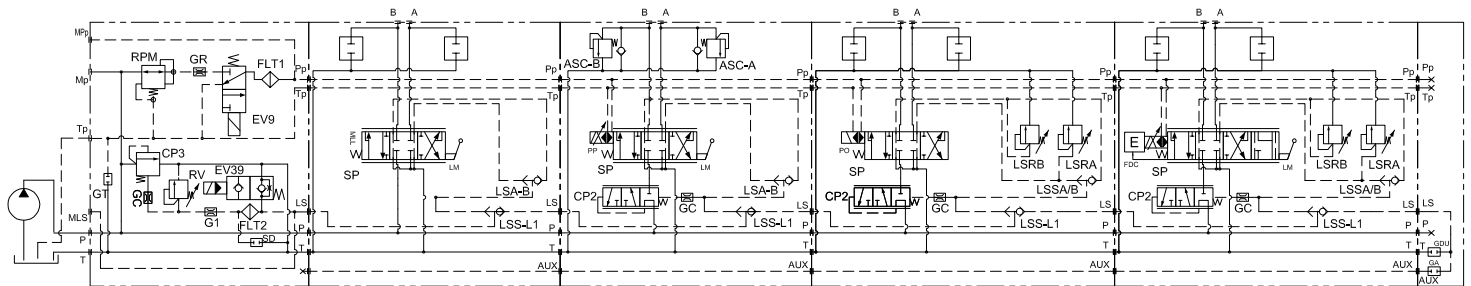
and drained to tank once all spools are returned to neutral. The load sensing system maintains the delta P constant through spool control notches by means of the pressure compensation principle (spool sections are equipped with local 2 ways pressure compensator). Each **TDV100** sectional valve is crossed by a pilot pressure supply line and a return rail to feed around 20-25 bar to the MULTIDROM electro-hydraulic actuators system or proportional pilot pressure valves.



**TECNORD**



**ELECTRO-HYDRAULIC SCHEMATIC**



**PRODUCT FEATURES AND BENEFITS**

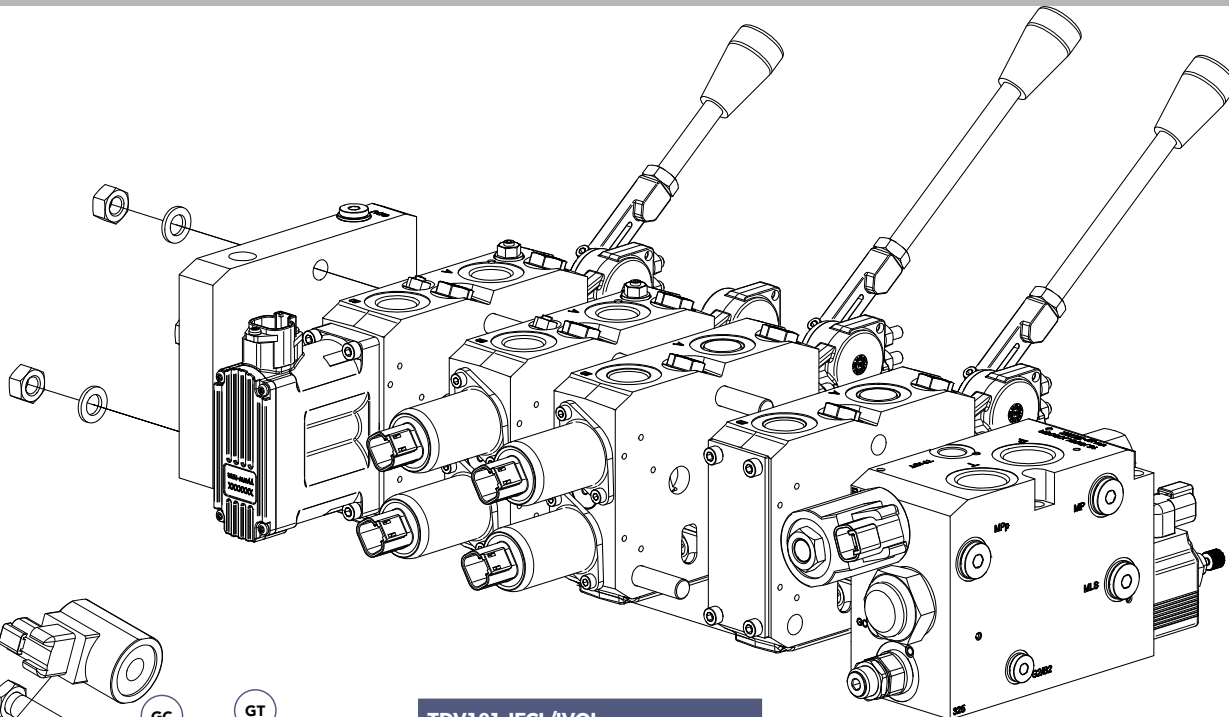
- Load-independent simultaneous control of two or more functions, within pump's flow saturation limits.
- Proportional flow control extended to 95% of spool stroke.
- MULTIDROM proportional actuators have built-in electronics requiring only variable voltage signals from a joystick.
- Internal closed loop position control configuration makes the valve spool achieving the desired position with accuracy levels approaching the performance of a servo-valve.
- Built-in CANbus interface working on SAE J1939 protocol.
- Non-feedback proportional and ON-OFF pilot pressure control actuators available.
- Electro-hydraulic, pressure compensated meter-in control of pump flow is available for cost-effective applications.
- Special "craning" spool configuration for overhung load control in conjunction with counterbalance valves.

**SPECIFICATIONS**

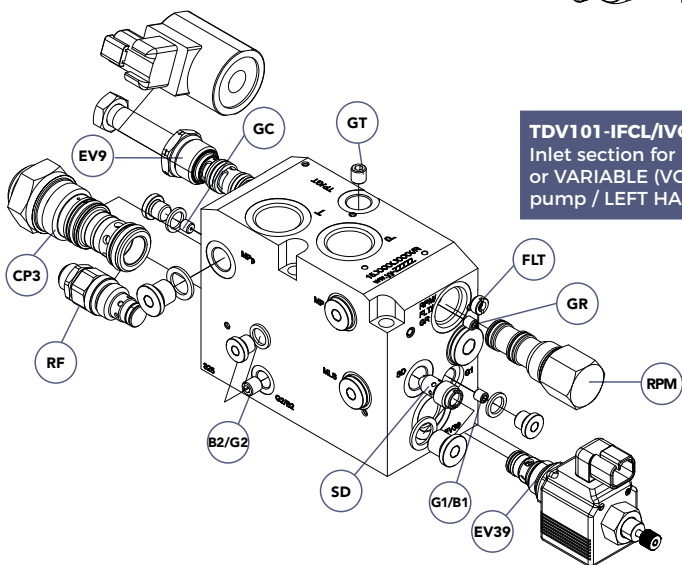
- Max. operating flow..... 120 lt/min
- Max. operating flow per section..... 110 lt/min
- Max. working pressure..... 320 bar
- Min. stand-by & pilot pressure ..... 14 bar
- Spool stroke ..... 6 mm
- Section width ..... 42 mm
- P & T Ports ..... 3/4" - BSP
- A & B work ports size ..... 1/2" - BSP
- Fluid..... Mineral based oil
- Fluid temperature range..... -25°C/+95°C
- Optimum fluid viscosity range..... 3<cSt<648
- Max. fluid contamination level..... 18/15/10 (ISO 4406)
- Seals ..... Buna-N (Std.) / Viton (Opt.)

**MANUAL AND ELECTRO-HYDRAULIC CONTROLS**

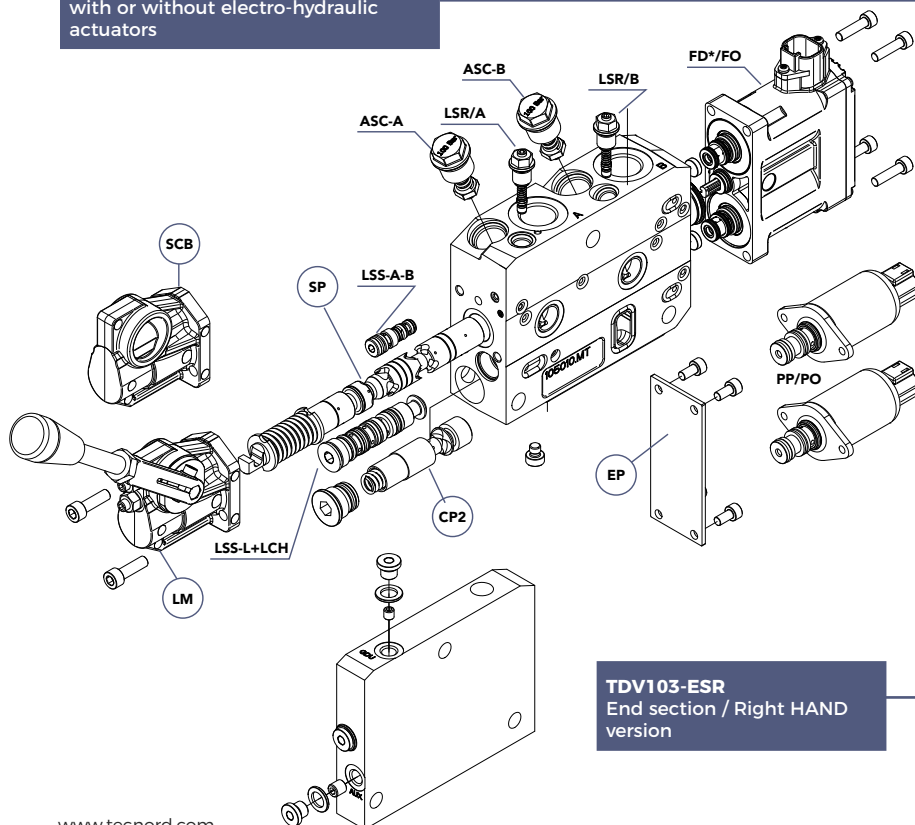
- TDV102-LM00** Manual control lever.
- TDV102-LMPP** Electro-hydraulic, open loop proportional control.
- TDV102-00PP** With or without manual lever.
- TDV102-LMPO** Electro-hydraulic, ON-OFF control / PO type.
- TDV102-00PO** With or without manual lever.
- TDV102-LMFD** Electro-hydraulic, closed loop proportional control.
- TDV102-00FD** With or without manual lever.



**TDV101-IFCL/IVOL**  
Inlet section for FIXED (FC) or VARIABLE (VO) displacement pump / LEFT HAND version



**TDV102**  
Work section / Pressure compensated with or without electro-hydraulic actuators



**TDV103-ESR**  
End section / Right HAND version

POSITION	DESCRIPTION
<b>TDV101-LT</b>	<b>LH INLET SECTION</b>
CP3	By-pass pressure compensator
GT	Blank plug / Tp to T connection
SD	Pressure Compensated Bleed off orifice
G1	Orifice (fixed displacement pumps)
B2	Blank plug (fixed displacement pumps)
G2	Orifice (variable displacement pumps)
B1	Blank plug (variable displacement pumps)
RF	LS signal relief valve (system relief valve)
EV39	2W2P N.O. solenoid op. LS venting valve
RPM	Mechanical pilot pressure reducing valve
EV9	3W2P solenoid op. pilot pressure dump valve
FLT1	Pilot pressure line filter screen
FLT2	Load sensing line filter screen

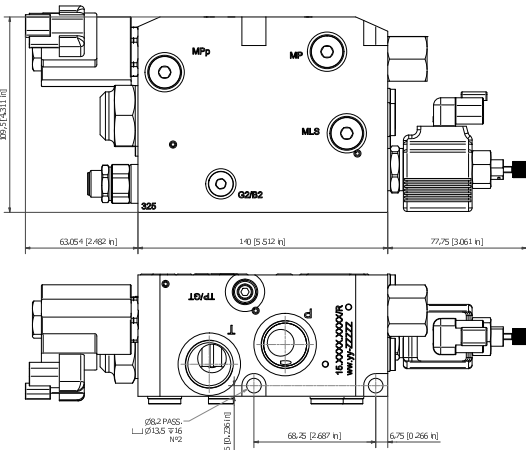
POSITION	DESCRIPTION
<b>TDV102-LT</b>	<b>WORK SECTION</b>
CP2	Pressure compensator/Reducer
SP	Directional spool
ASC-A/B	Anti-shock/Anti-cavitation valves A/B ports
LSR-A/B	LS relief valve A/B lines
LSS-L	LS shuttle valve - LS common line
LCH	Load check
LSS-A/B	LS Shuttle valve A/B lines
LM	Manual lever control
SCB	Spring cover block w/o manual lever mechanism
NLA	No-leak valve - Port A only
EP	End plate/Blank
PP	Proportional pressure control
PO	ON-OFF control/PO type
FDC	Closed loop control/CAN version
FDA	Closed loop control (5V aux supply)
FDF	Closed loop control (position sensor output)
FDR	Closed loop control/Ratiometric version
FO	ON-OFF control (12 or 24 VDC)

POSITION	DESCRIPTION
<b>TDV103-LT</b>	<b>RH END SECTION</b>
ESR	End section/Blank
TR	Tie rods

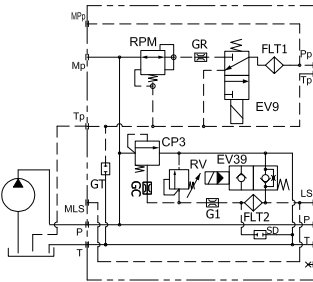
**DIMENSIONAL CHARACTERISTICS**

**HYDRAULIC SCHEMATIC**

**PERFORMANCE CURVES**

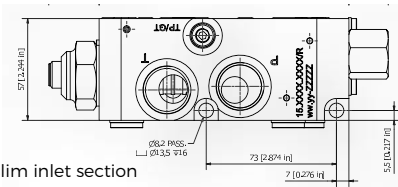
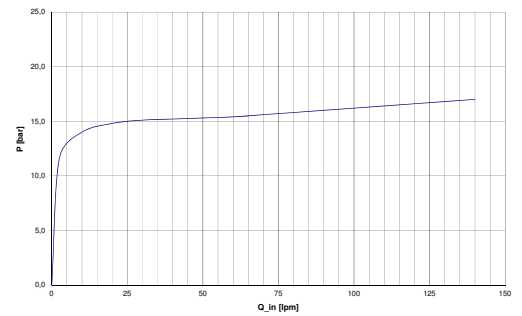


Standard inlet section



Note: slim inlet section has same hydraulic scheme as standard inlet without valves EV9 and EV39

Pressure drop across pressure compensated CP3 (bar) vs. pump flow (lt/min)

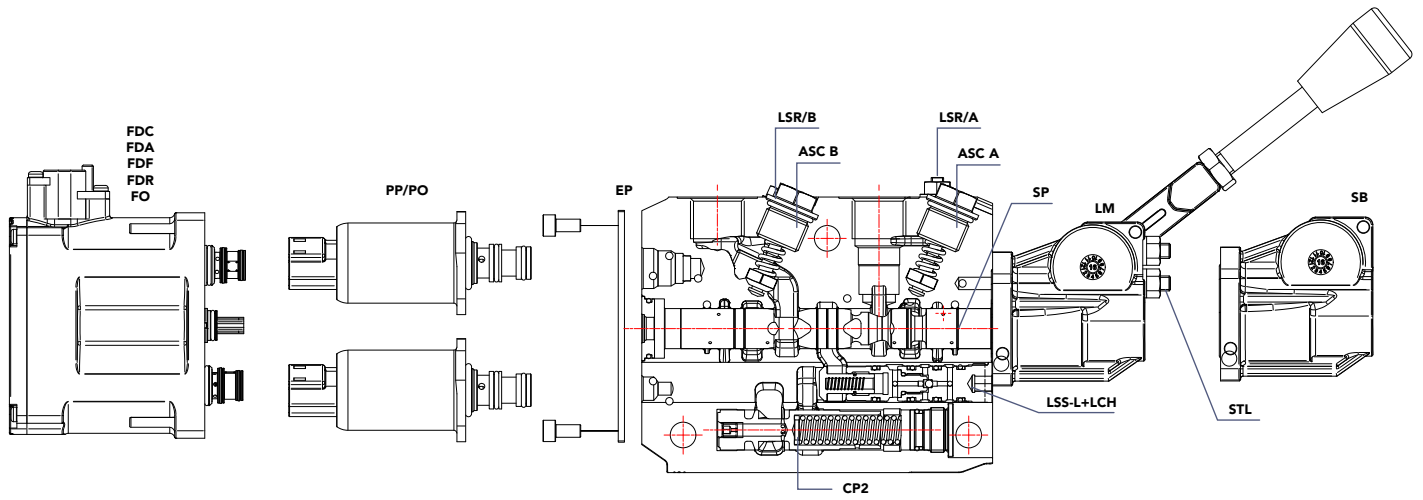


Slim inlet section

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
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POS.	ORDERING INFORMATION	TDV101-LT	IFCLAG34	C18R25	RPM30	EV39	EV9	12VDT	XXX/Y
1	Inlet Section Model								
2	Configuration and Work Ports Size								
3	System Relief Valve Setting								
4	Mechanical Pressure Reducing Valve								
5	2W2P N.O. Solenoid Operated LS Signal Venting Valve								
6	3W2P Solenoid Operated Pilot Pressure Cut-Off Valve								
7	Voltage and Solenoid Valves Coil Termination								
8	Last 3-digits of the 9-digits Tecnom P/N and Design Level								

POS.	DESCRIPTION	AVAILABLE OPTIONS
2	Configuration and Work Ports Size	ISFCLAG34 Slim version / with unloader valve for fixed displ. pumps - G3/4" (BSP) ports
		ISV0LG34 Slim version / without unloader valve for variable displ. pumps - G3/4" (BSP) ports
		IFCLAG34 Std. version / with unloader valve for fixed displ. pumps - G3/4" (BSP) ports
		IV0LG34 Std. version / without unloader valve for variable displ. pumps - G3/4" (BSP) ports
		ISFCLAS12 Slim version / with unloader valve for fixed displ. pumps - 1.1/16"-12UNF (SAE12)
		ISV0LS12 Slim version / without unloader valve for variable displ. pumps - 1.1/16"-12UNF (SAE12)
		IFCLAS12 Std. version / with unloader valve for fixed displ. pumps - 1.1/16"-12UNF (SAE12)
		IV0LS12 Std. version / without unloader valve for variable displ. pumps - 1.1/16"-12UNF (SAE12)
3	System Relief Valve Setting	Rxx Relief valve setting
4	Mechanical Pressure Reducing Valve (Slim and Standard Version)	RPM14 Mechanical pilot pressure reducing valve for ON-OFF control (14 bar pilot pressure)
		RPM20 Mechanical pilot pressure reducing valve for closed loop control (20 bar pilot pressure)
		RPM30 Mechanical pilot pressure reducing valve for open loop control (30 bar pilot pressure)
		TCRPM RPM Cavity plug for closed loop control (30 bar pilot pressure)
5	LS Signal Venting Valve (Standard version only)	EV39 2W2P N.O. solenoid operated LS signal venting valve
		TC39 Cavity plug
6	Pilot Pressure Cut-Off Valve (Standard Version only)	EV9 3W2P solenoid operated pilot pressure cut-off valve
		TC9 Cavity plug



1	2	3	4	5	6	7	8	9	10	11	12
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POS.	ORDERING INFO.	TDV102-LT	00CP	LMFDA	STL	YO80	F	A18/B15	LSA15/B12	NLA	12VDT	G12	XXX/Y
2	Work Section Configuration					00CP	Pressure compensated						
						00CH	With load check						
						CPCH	With pressure compensator and load check						
3	Control Configuration					LM00	Manual lever						
						LMPP	Manual lever / Open loop proportional control						
						00PP	No manual lever / Open loop proportional control						
						LMPO	Manual lever / ON-OFF control						
						00PO	No manual lever / ON-OFF control						
4	Dual stroke limiter					000	No stroke limiter						
						STL	Dual stroke limiter						
5	Spool Configuration/Flow Rate (see Tab. A)					XXxx	Cylinder spool (P, T, A, B blocked)						
						YOxx	Motor spool (P blocked / A&B to T)						
						YSxx	Motor spool (P blocked / A&B to T / restricted flow)						
						KAxx	Semi-motor spool (P&B blocked / A to T)						
						KBxx	Semi-motor spool (P&A blocked / B to T)						
						SExx	Single effect spool						
						ZZ	Special spool						
6	Float					F	4/th position FLOAT on Port A						
7	Anti-Shock/Anti-Cavitation Valves (see Tab. B)					A00/B00	No anti-shock/anti-cavitation valves						
						Axx/B00	ASC valve on A port / No ASC valve on Port B						
						A00/Byy	No ASC valve on A port / ASC valve on Port B						
						Axx/Byy	ASC valve on A&B ports						
8	LS Relief Valves on A and/or B port (see Tab. C)					ATC/BTC	ASC cavity plugs on A and/or B ports						
						LSA00/B00	No Load sensing relief valves						
						LSA/B	Load sensing relief valve on Ports A & B - No Factory Pre-setting						
9	NLA					LSAxx/Byy	Load sensing relief valve on Ports A & B (Factory Pre-setting)						
						000	Without No-leak valve on Port A						
10	Voltage & Terminations					NLA	No-leak valve on Port A						
						12VDT	12VDC - Deutsch DT04 connector for ON-OFF control only						
11	Ports Size					24VDT	24VDC - Deutsch DT04 connector for ON-OFF control only						
						G12	A&B ports: 1/2" - BSP						
						S10	A&B ports: 7/8"-14UNF (SAE10) Option available on request						

TAB. A	Spool Metering Characteristics			
10=	0 to 10 lt/min	60=	0 to 60 lt/min	
20=	0 to 20 lt/min	80=	0 to 80 lt/min	
40=	0 to 30 lt/min	100=	0 to 100 lt/min	

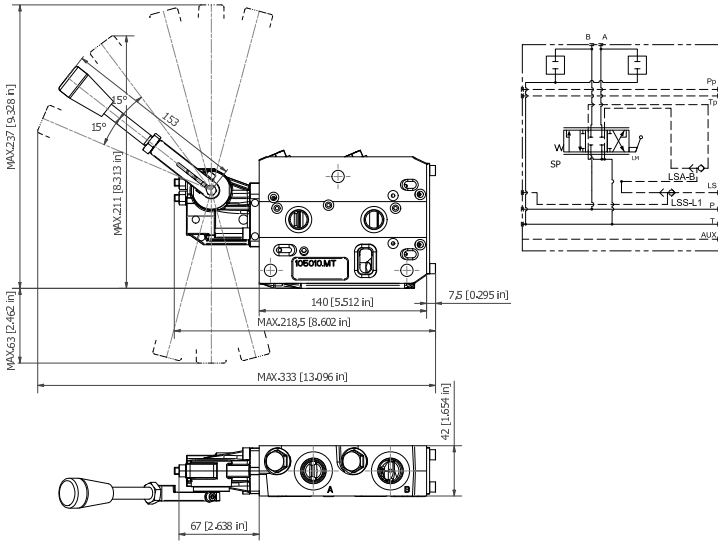
TAB. B	Anti-Shock Valves Setting			
A00=	No port relief	B00=	No port relief	
A07=	Port A/70 bar	ATC=	Cavity plug on A	
B28=	Port B/280 bar	BTC=	Cavity plug on B	

TAB. C	LSA/LSB Relief Valves Setting			
LSA00	No LS relief	LSB00	No LS relief	
LSA12	120 bar	LSB08	80 bar	
LSA25	250 bar	LSB28	280 bar	

Port relief valve standard settings: 70-100-120-140-160-180-200-220-240-260-280 Different settings available on request

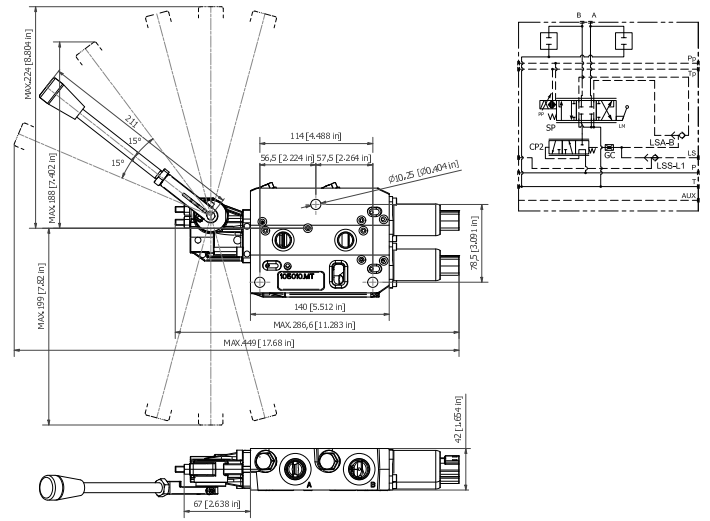
**TDV102-LM00**

**Directional valve section with manual control**

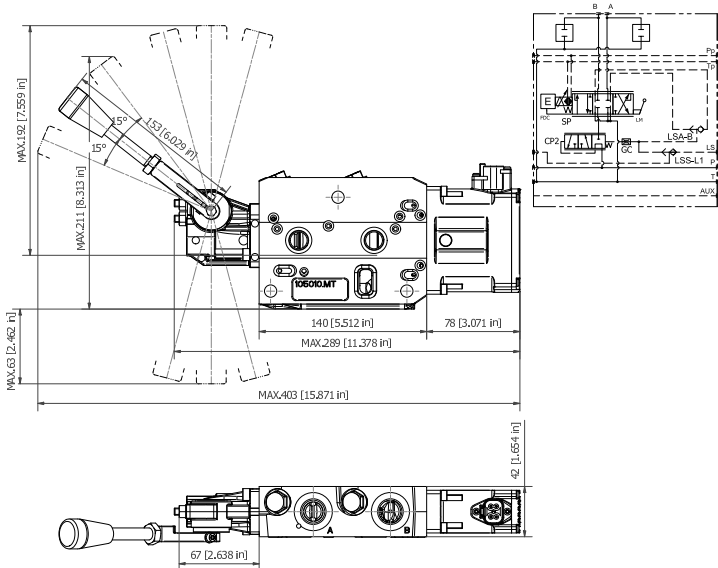


**TDV102-LMPP**

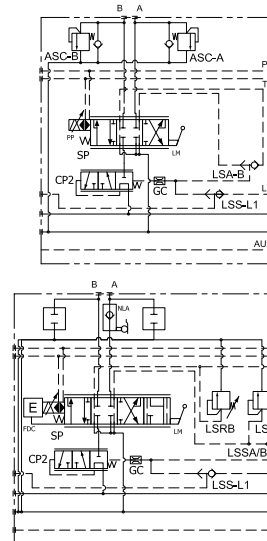
**Directional valve section with dual proportional pilot pressure reducing valves for PWM open loop control of spool stroke and manual lever**



**TDV102-LMFD**



**OPTIONAL FEATURES**



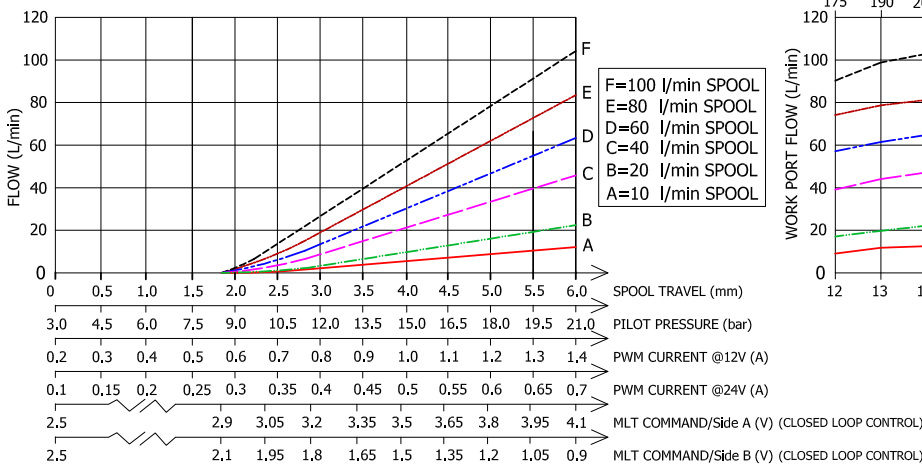
- ASC: anti-shock / anticavitation valves**
- Axx/B00: ASC valve on port A
- A00/Bxx: ASC valve on port B
- Axx/Bxx: ASC valves on ports A and B
- ATC/BTC: cavity plug on ports A and B

- LSR A/B-Load Sensing Relief Valves**
- LSRA: load sensing relief valve on line A
- LSRB: load sensing relief valve on line B

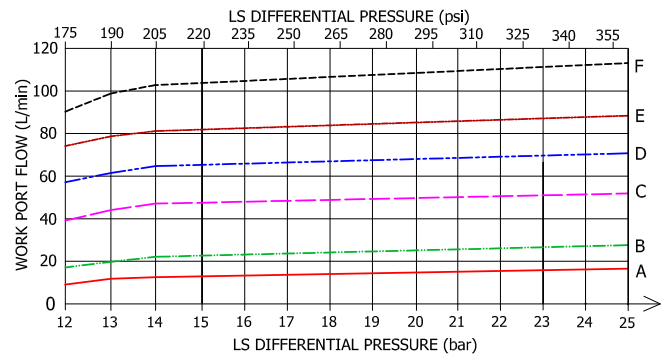
- NLA: no-leak valve on port A**

- F: 4<sup>th</sup> position FLOAT**

**Work port flows vs. spool travel & various control parameters**



**Spool flows vs. differential pressure**



**CP2 standard setting: 10 bar**  
**CP3 standard setting: 18 bar @ 50 lpm**  
**For special settings please contact Tecnom**

**PRINCIPLE OF OPERATION**

The MLT-FD5/D electro-hydraulic proportional actuator has been designed to shift a directional control valve spool either directly (**FL version**) or by means of a servo-piston mechanically connected to it (**SP version**).

The internal closed loop position control configuration makes the valve spool achieve the desired position with an accuracy levels approaching the performance of a servo-valve, by continuously comparing the set-point of a remote control device (**Potentiometer, Joystick, Machine Management System**) with the feed-back signal generated by the internal high-precision hall effect position transducer.

**SPOOL STROKE A**

When the input voltage signal fed to the MLT-FD5 actuator is maintained within 2.25 and 2.75V, the directional valve spool is at rest (Neutral Dead Band). When  $V_{in} = 2.75V$ , the spool steps up from NEUTRAL to MINIMUM FLOW control position. A linear ramp from MIN. to MAX. spool stroke will follow by increasing  $V_{in}$  from 2.75 to 4.1V. At  $V_{in} = 4.50V$ , the spool is brought into its FLOAT POSITION, if present. By decreasing the input

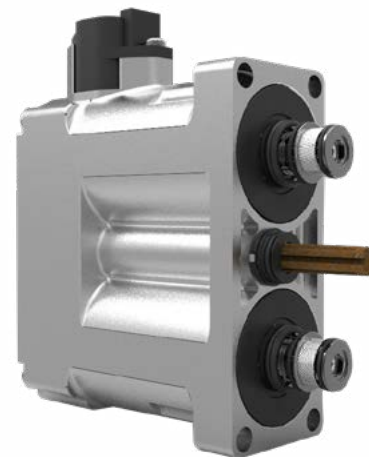
voltage from 4.1 to 2.75V, the spool stroke is linearly reduced and after the oil flow is fully shut-off, a step-down from MINIMUM FLOW to NEUTRAL position takes place.

**SPOOL STROKE B**

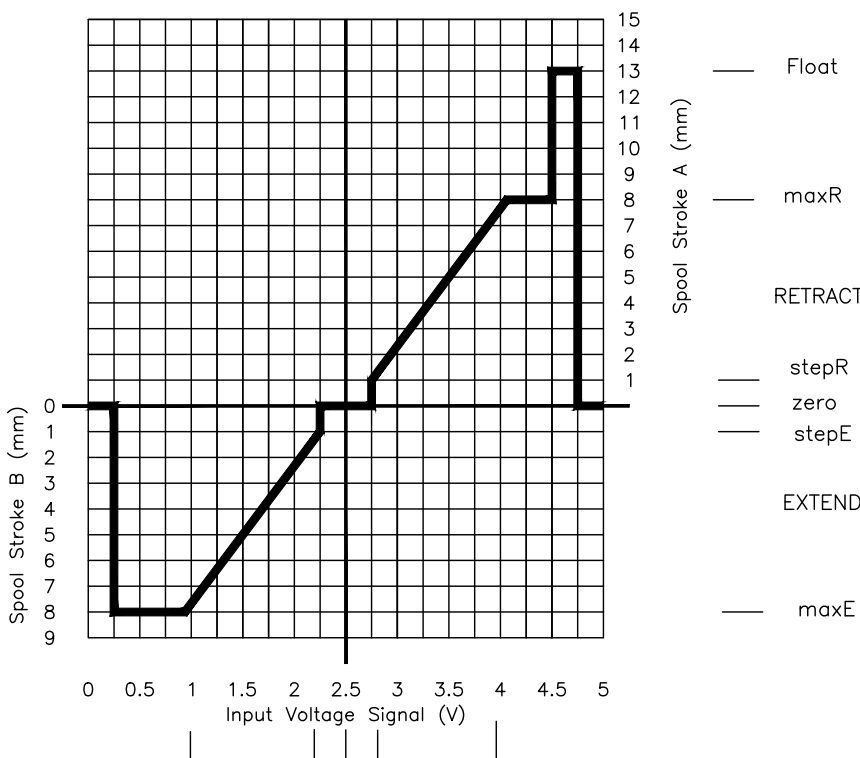
Same as for STROKE A, by varying  $V_{in}$  from 2.25 to 0.9V, the spool will go from NEUTRAL to MAX. STROKE in the opposite direction.

**ALARM / FAIL - SAFE MODE**

An input voltage variation beyond the calibration range ( $<0.25V$  or  $>4.75V$ ) will bring the system into an ALARM mode, urging the spool to return to its NEUTRAL position until  $V_{in}$  is brought back to its nominal control range.



**VALVE SPOOL STROKE VS. INPUT SIGNAL**



**HYDRAULIC SPECIFICATIONS**

Max. supply pressure ..... 35 bar  
 Min. supply pressure ..... 12 bar  
 Max. back pressure ..... 1.5 bar  
 Pilot flow requirement ..... 0.2 lt/section  
 Oil temperature range ..... -20/+95°C  
 Oil viscosity range ..... 3-650 cSt  
 Filtration ..... 18/15/10 (ISO 4406)

**ELECTRICAL SPECIFICATIONS**

Operating voltage ..... 8-30 VDC  
 Max. current consumption ..... 750mA/section  
 Operating temperature ..... -40/+125°C  
 Analog input impedance ..... >40 kOhm  
 Typical ctrl pot. resistance ..... 1-10 kOhm  
 Degree of protection ..... IP 68

**AVAILABLE CONFIGURATIONS AND MODEL DESIGNATION**

**FDC**  
 Proportional actuator  
 Digital electronics  
 CANbus control  
 (J1939)

**FDF**  
 Proportional actuator  
 Digital electronics  
 Analog control signal  
 (e.g. Potentiometer)  
 Feedback output  
 (spool position): 0-5V

**FDO**  
 On/Off actuator

**FDA**  
 Proportional actuator  
 Digital electronics  
 Analog control signal  
 (e.g. Potentiometer)  
 +5V auxiliary power  
 supply for the control  
 potentiometer

**FDR**  
 Proportional actuator  
 Digital electronics  
 Ratiometric control  
 signal  
 (% of supply voltage)

**CONNECTOR PINOUT (FRONT VIEW)**

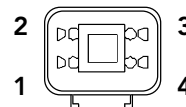
**FDC**  
 1. +Power Supply  
 2. CANL  
 3. CANH  
 4. -Power Supply (GND)

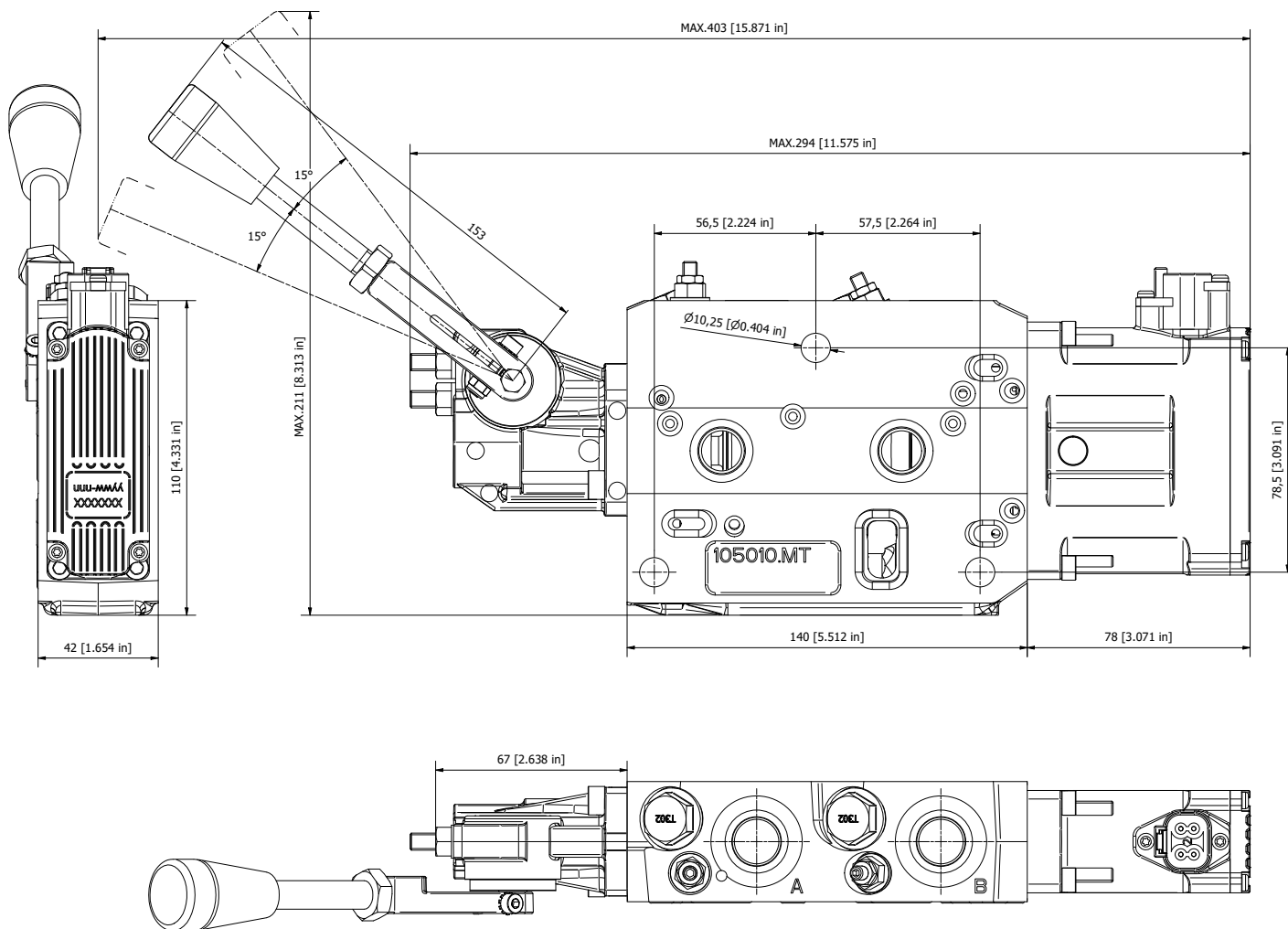
**FDR**  
 1. +V Power Supply  
 2. Do not Connect  
 3. Control Signal  
 4. -V Power Supply (GND)

**FDA**  
 1. +Power Supply  
 2. +5V Aux. Supply voltage  
 3. Control Signal  
 4. -Power Supply (GND)

**FO12/FO24**  
 1. +Power Supply coil A  
 2. -Power Supply (GND) coil A  
 3. +Power Supply coil B  
 4. -Power Supply (GND) coil B

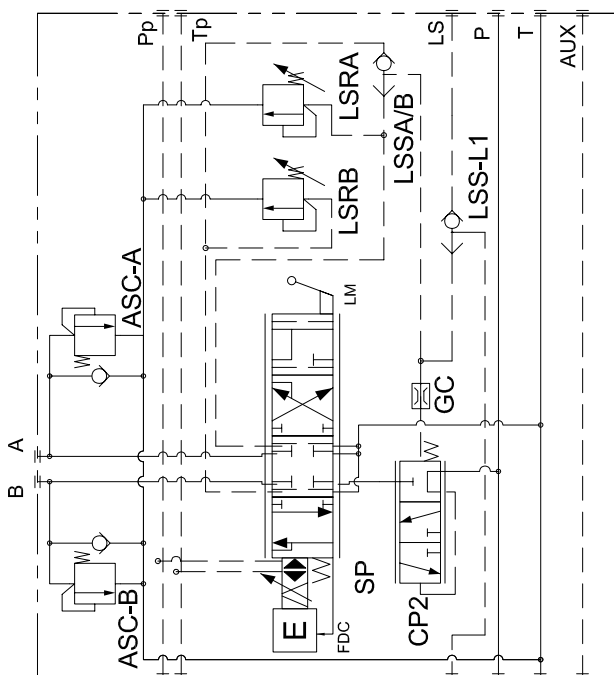
**FDF**  
 1. +Power Supply  
 2. Sensor Feedback Output  
 3. Control Signal  
 4. -Power Supply (GND)



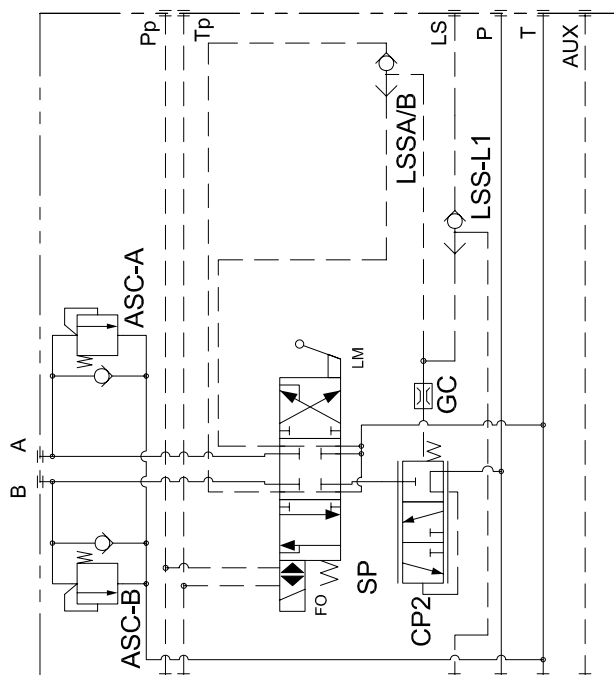


HYDRAULIC SCHEMATICS

FD\* - CLOSED LOOP PROPORTIONAL CONTROL



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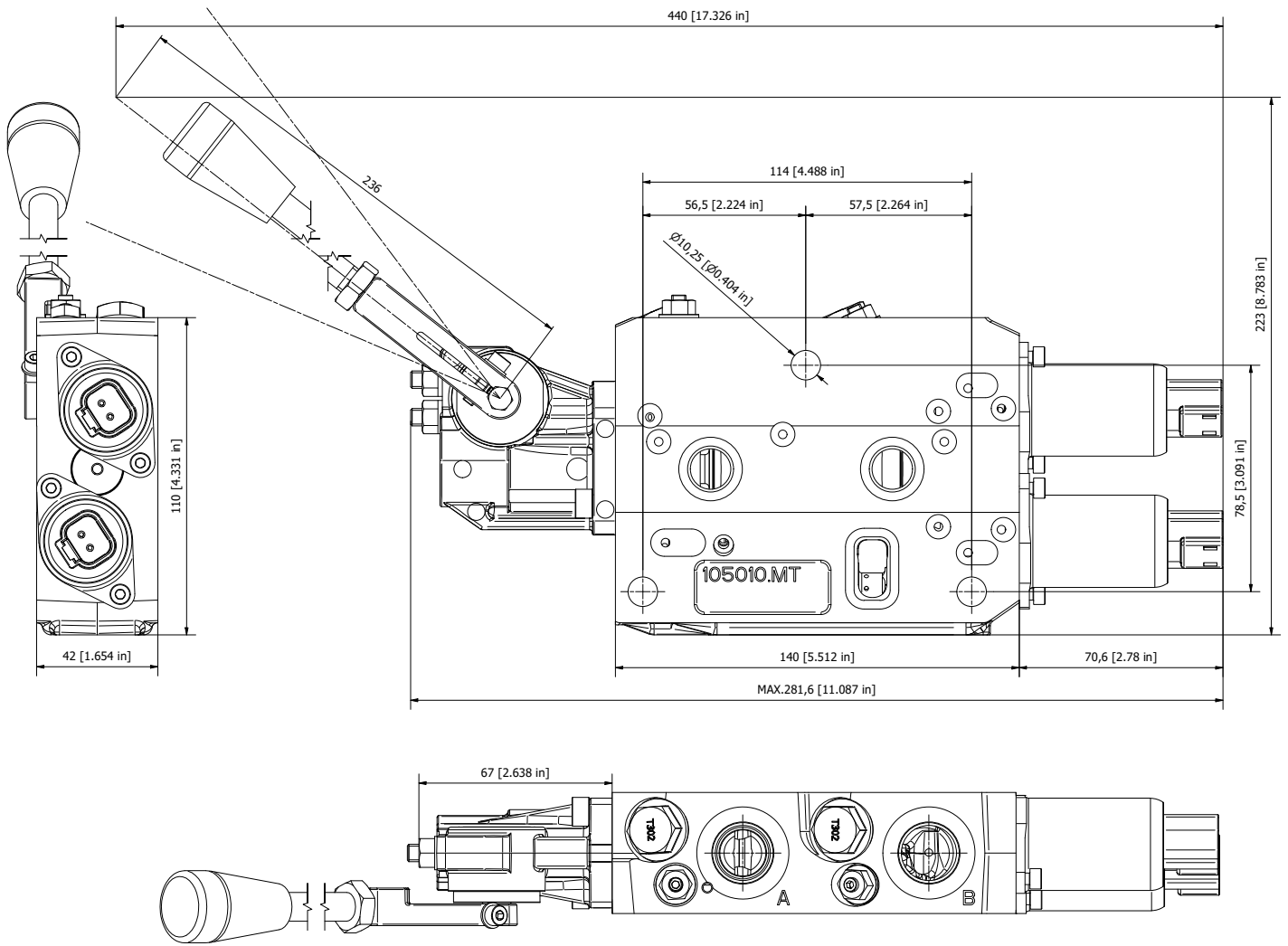
		1	2	3	4	5	6	7	8	9	10	11	12
POS.	ORDERING INFO.	TDV102-LT	00CP	LMFDC	STL	YO80	F	A18/B15	LSA15/B12	NLA	12VDT	G12	XXX/Y
2	Work Section Configuration	00CP	Pressure compensated										
		00CH	With load check										
		CPCH	With pressure compensator and load check										
3	Control Configuration	LMFD*	Manual lever / Closed loop proportional control										
		00FD*	No manual lever / Closed loop proportional control										
		LMFO	Manual lever / ON-OFF control										
		00FO	No manual lever / ON-OFF control										
4	Dual stroke limiter	000	No stroke limiter										
		STL	Dual stroke limiter										
5	Spool Configuration/Flow Rate (see Tab. A)	XXxx	Cylinder spool (P, T, A, B blocked)										
		YOxx	Motor spool (P blocked / A&B to T)										
		YSxx	Motor spool (P blocked / A&B to T / restricted flow)										
		KAxx	Semi-motor spool (P&B blocked / A to T)										
		KBxx	Semi-motor spool (P&A blocked / B to T)										
		SExx	Single effect spool										
		ZZ	Special spool										
6	Float	0	No FLOAT										
		F	4/th position FLOAT on Port A (for proportional control only)										
7	Anti-Shock/Anti-Cavitation Valves (see Tab. B)	A00/B00	No anti-shock/anti-cavitation valves										
		Axx/B00	ASC valve on A port / No ASC valve on Port B										
		A00/Byy	No ASC valve on A port / ASC valve on Port B										
		Axx/Byy	ASC valve on A&B ports										
		ATC/BTC	ASC cavity plugs on A and/or B ports										
8	LS Relief Valves on A and/or B port (see Tab. C)	LSA00/B00	No Load sensing relief valves										
		LSA/B	Load sensing relief valve on Ports A & B - No Factory Pre-setting										
		LSAxx/Byy	Load sensing relief valve on Ports A & B (Factory Pre-setting)										
9	NLA	000	Without No-leak valve on Port A										
		NLA	No-leak valve on Port A										
10	Voltage & Terminations	00DT	00VDC (for proportional control only) - Deutsch DT04 connector										
		24VDT	24VDC (for ON-OFF control only) - Deutsch DT04 connector										
		12VDT	12VDC (for ON-OFF control only) - Deutsch DT04 connector										
11	Ports Size	G12	A&B ports: 1/2" - BSP										
		S10	A&B ports: 7/8"-14UNF (SAE10) Option available on request										

TAB. A	Spool Metering Characteristics			
10=	0 to 10 lt/min	60=	0 to 60 lt/min	
20=	0 to 20 lt/min	80=	0 to 80 lt/min	
40=	0 to 30 lt/min	100=	0 to 100 lt/min	

TAB. B	Anti-Shock Valves Setting			
A00=	No port relief	B00=	No port relief	
A07=	Port A/70 bar	ATC=	Cavity plug on A	
B28=	Port B/280 bar	BTC=	Cavity plug on B	

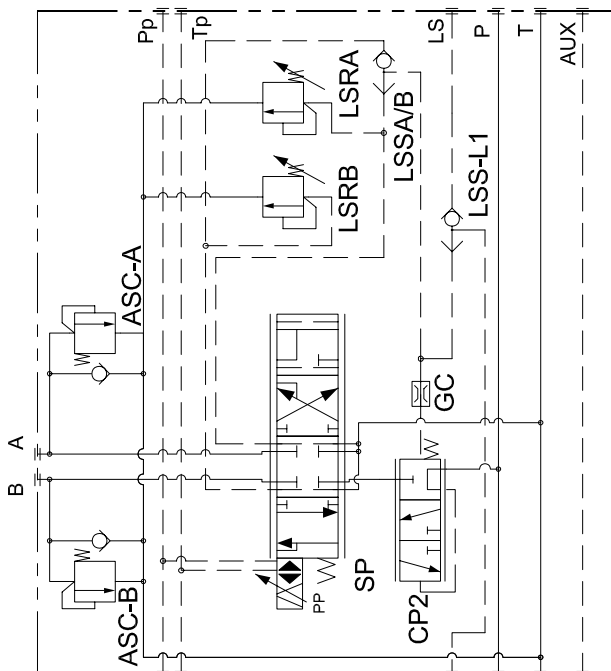
TAB. C	LSA/LSB Relief Valves Setting			
LSA00	No LS relief	LSB00	No LS relief	
LSA12	120 bar	LSB08	80 bar	
LSA25	250 bar	LSB28	280 bar	

Port relief valve standard settings: 70-100-120-140-160-180-200-220-240-260-280 different settings available on request

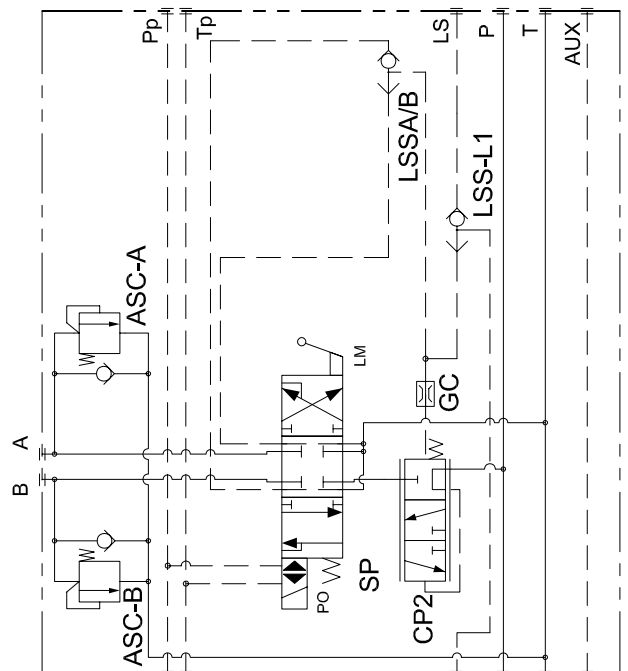


HYDRAULIC SCHEMATICS

FD\* - CLOSED LOOP PROPORTIONAL CONTROL



FD\* - CLOSED LOOP PROPORTIONAL CONTROL



		1	2	3	4	5	6	7	8	9	10	11	12
POS.	ORDERING INFO.	TDV102-LT	00CP	LMFDC	STL	YO80	F	A18/B15	LSA15/B12	NLA	12VDT	G12	XXX/Y
2	Work Section Configuration	00CP		Pressure compensated									
		00CH		With load check									
		CPCH		With pressure compensator and load check									
3	Control Configuration	LMFD*		Manual lever / Open loop proportional control									
		00FD*		No manual lever / Open loop proportional control									
		LMFO		Manual lever / ON-OFF control									
		00FO		No manual lever / ON-OFF control									
4	Dual stroke limiter	000		No stroke limiter									
		STL		Dual stroke limiter									
5	Spool Configuration/Flow Rate (see Tab. A)	XXxx		Cylinder spool (P, T, A, B blocked)									
		YOxx		Motor spool (P blocked / A&B to T)									
		YSxx		Motor spool (P blocked / A&B to T / restricted flow)									
		KAxx		Semi-motor spool (P&B blocked / A to T)									
		KBxx		Semi-motor spool (P&A blocked / B to T)									
		SExx		Single effect spool									
		ZZ		Special spool									
6	Float	0		No FLOAT									
		F		4/th position FLOAT on Port A (for proportional control only)									
7	Anti-Shock/Anti-Cavitation Valves (see Tab. B)	A00/B00		No anti-shock/anti-cavitation valves									
		Axx/B00		ASC valve on A port / No ASC valve on Port B									
		A00/Byy		No ASC valve on A port / ASC valve on Port B									
		Axx/Byy		ASC valve on A&B ports									
		ATC/BTC		ASC cavity plugs on A and/or B ports									
8	LS Relief Valves on A and/or B port (see Tab. C)	LSA00/B00		No Load sensing relief valves									
		LSA/B		Load sensing relief valve on Ports A & B - No Factory Pre-setting									
		LSAxx/Byy		Load sensing relief valve on Ports A & B (Factory Pre-setting)									
9	NLA	000		Without No-leak valve on Port A									
		NLA		No-leak valve on Port A									
10	Voltage & Terminations	00DT		00VDC (for proportional control only) - Deutsch DT04 connector									
		24VDT		24VDC (for ON-OFF control only) - Deutsch DT04 connector									
		12VDT		12VDC (for ON-OFF control only) - Deutsch DT04 connector									
11	Ports Size	G12		A&B ports: 1/2" - BSP									
		S10		A&B ports: 7/8"-14UNF (SAE10) Option available on request									

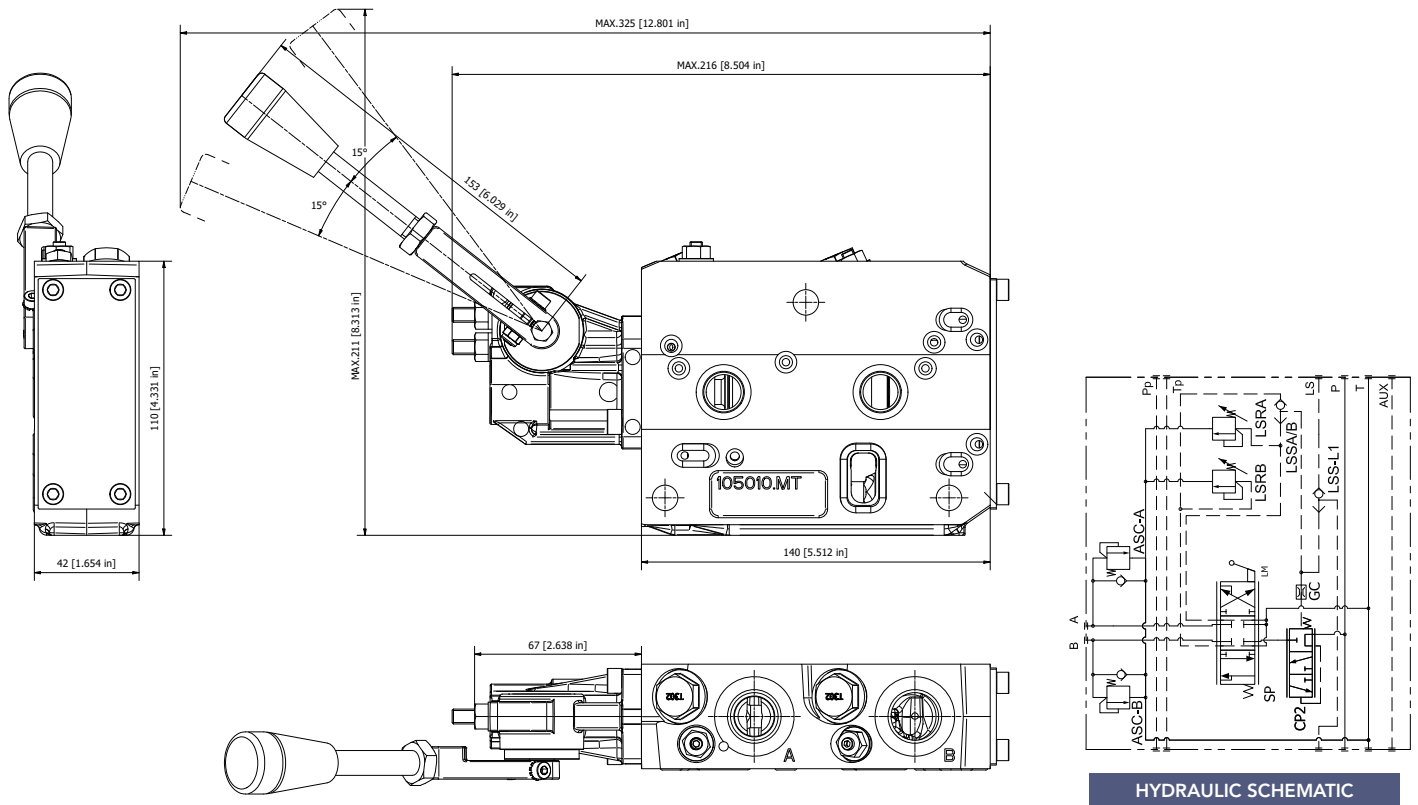
TAB. A	Spool Metering Characteristics			
10=	0 to 10 lt/min	60=	0 to 60 lt/min	
20=	0 to 20 lt/min	80=	0 to 80 lt/min	
40=	0 to 30 lt/min	100=	0 to 100 lt/min	

TAB. B	Anti-Shock Valves Setting			
A00=	No port relief	B00=	No port relief	
A07=	Port A/70 bar	ATC=	Cavity plug on A	
B28=	Port B/280 bar	BTC=	Cavity plug on B	

TAB. C	LSA/LSB Relief Valves Setting			
LSA00	No LS relief	LSB00	No LS relief	
LSA12	120 bar	LSB08	80 bar	
LSA25	250 bar	LSB28	280 bar	

Port relief valve standard settings: 70-100-120-140-160-180-200-220-240-260-280 different settings available on request

Directional valve section with manual lever



POS.	ORDERING INFO.	1	2	3	4	5	6	7	8	9	10	11	12
		TDV102-LT	00CP	LM00	STL	YO80	F	A18/B15	LSA15/B12	NLA	12VDT	G12	XXX/Y
2	Work Section Configuration	00CP	Pressure compensated										
		00CH	With load check										
		CPOCH	With pressure compensator and load check										
3	Control Configuration	LM00	Manual lever										
4	Dual stroke limiter	000	No stroke limiter										
5	Spool Configuration/Flow Rate (see Tab. A)	STL	Dual stroke limiter										
		XXxx	Cylinder spool (P, T, A, B blocked)										
		YOxx	Motor spool (P blocked / A&B to T)										
		YSxx	Motor spool (P blocked / A&B to T / restricted flow)										
		KAxx	Semi-motor spool (P&B blocked / A to T)										
		KBxx	Semi-motor spool (P&A blocked / B to T)										
		SExx	Single effect spool										
6	Float	ZZ	Special spool										
		0	No FLOAT										
7	Anti-Shock/Anti-Cavitation Valves (see Tab. B)	F	4/th position FLOAT on Port A										
		A00/B00	No anti-shock/anti-cavitation valves										
		Axx/B00	ASC valve on A port / No ASC valve on Port B										
		A00/Byy	No ASC valve on A port / ASC valve on Port B										
		Axx/Byy	ASC valve on A&B ports										
8	LS Relief Valves on A and/or B port (see Tab. C)	ATC/BTC	ASC cavity plugs on A and/or B ports										
		LSA00/B00	No Load sensing relief valves										
		LSA/B	Load sensing relief valve on Ports A & B - No Factory Pre-setting										
9	NLA	LSAxx/Byy	Load sensing relief valve on Ports A & B (Factory Pre-setting)										
		000	Without No-leak valve on Port A										
11	Ports Size	NLA	No-leak valve on Port A										
		G12	A&B ports: 1/2"- BSP										
		S10	A&B ports: 7/8"-14UNF (SAE10) Option available on request										

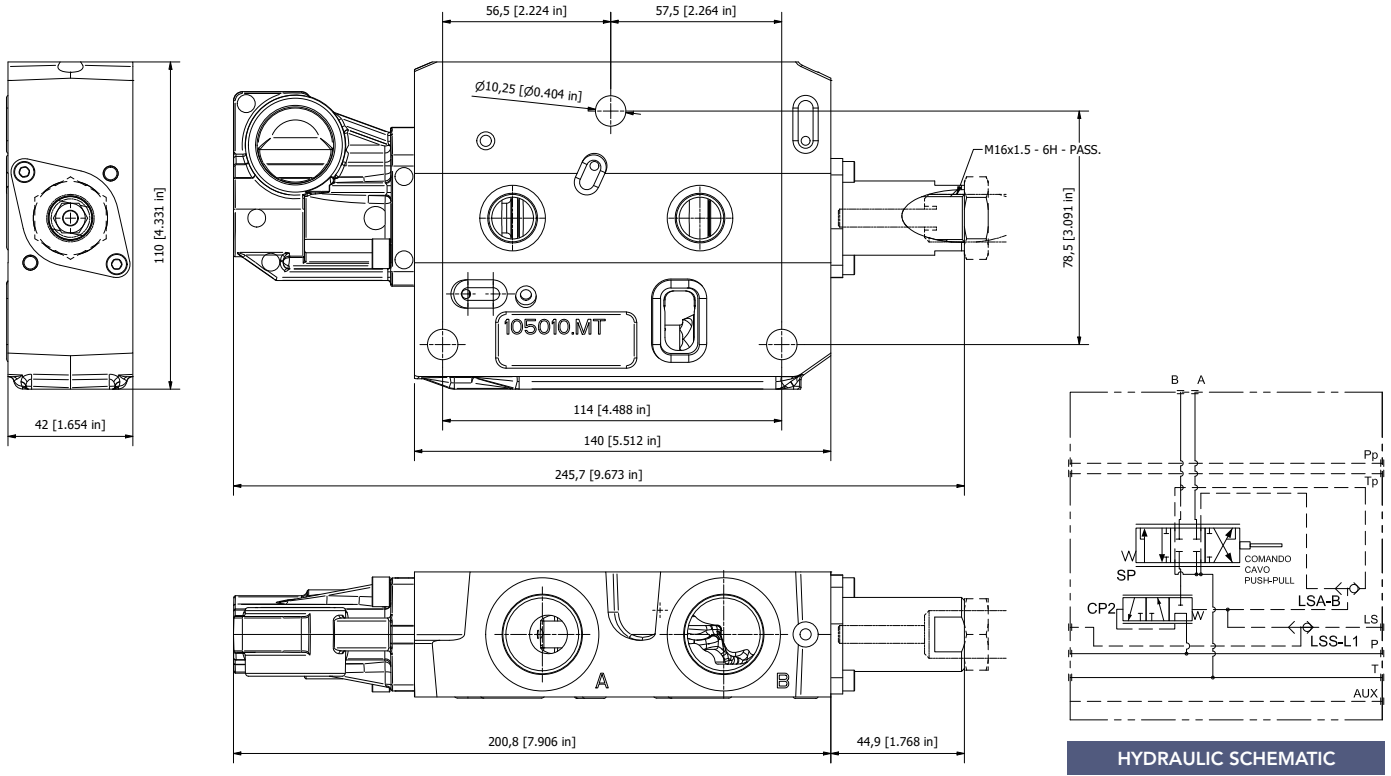
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TAB. C	LSA/LSB Relief Valves Setting			
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Port relief valve standard settings: 70-100-120-140-160-180-200-220-240-260-280 different settings available on request

Directional valve section with cable remote control



POS.	ORDERING INFO.	1	2	3	4	5	6	7	8	9	10	11	12	
		TDV102-LT	00CP	00CR	STL	YO80	F	A18/B15	LSA15/B12	NLA	12VDT	G12	XXX/Y	
2	<b>Work Section Configuration</b>		00CP	Pressure compensated		00CH	With load check		CPCH	With pressure compensator and load check				
3	<b>Control Configuration</b>		00CR	No manual lever / Cable remote control										
4	<b>Dual stroke limiter</b>		000	No stroke limiter										
5	<b>Spool Configuration/Flow Rate (see Tab. A)</b>		XXxx	Cylinder spool (P, T, A, B blocked)		YOxx	Motor spool (P blocked / A&B to T)		YSxx	Motor spool (P blocked / A&B to T / restricted flow)				
			KAxx	Semi-motor spool (P&B blocked / A to T)		KBxx	Semi-motor spool (P&A blocked / B to T)		SExx	Single effect spool				
			ZZ	Special spool										
			0	No FLOAT										
			F	4/th position FLOAT on Port A										
			A00/B00	No anti-shock/anti-cavitation valves										
7	<b>Anti-Shock/Anti-Cavitation Valves (see Tab. B)</b>		Axx/B00	ASC valve on A port / No ASC valve on Port B		A00/Byy	No ASC valve on A port / ASC valve on Port B		Axx/Byy	ASC valve on A&B ports				
			ATC/BTC	ASC cavity plugs on A and/or B ports										
			LSA00/B00	No Load sensing relief valves		LSA/B	Load sensing relief valve on Ports A & B - No Factory Pre-setting		LSAxx/Byy	Load sensing relief valve on Ports A & B (Factory Pre-setting)				
			NLA	Without No-leak valve on Port A		NLA	No-leak valve on Port A							
10	<b>Voltage &amp; Terminations</b>		12VDT	12VDC - Deutsch DT04 connector for ON-OFF control only		24VDT	24VDC - Deutsch DT04 connector for ON-OFF control only							
			G12	A&B ports: 1/2" - BSP		S10	A&B ports: 7/8"-14UNF (SAE10) Option available on request							

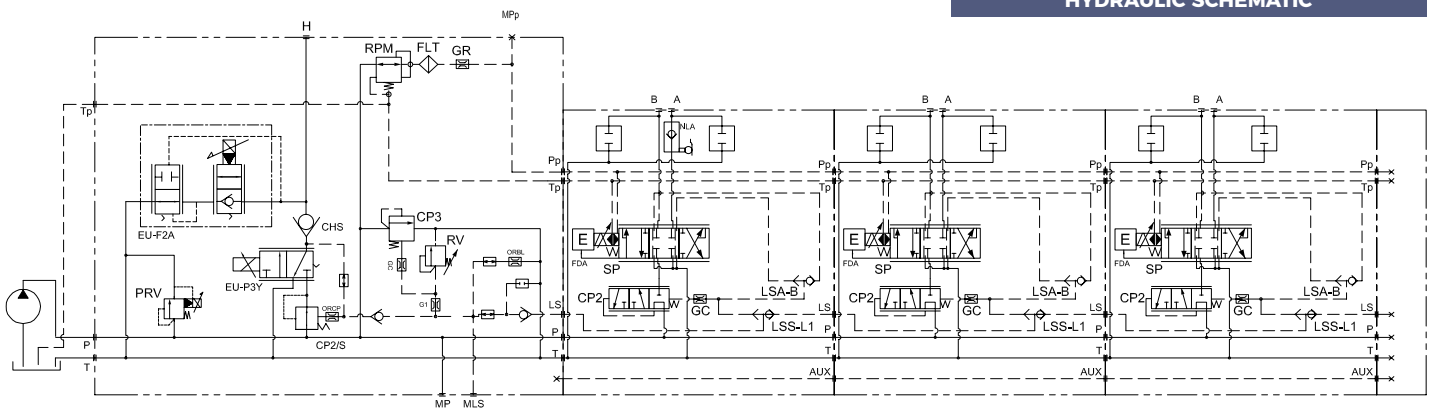
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TAB. C	LSA/LSB Relief Valves Setting			
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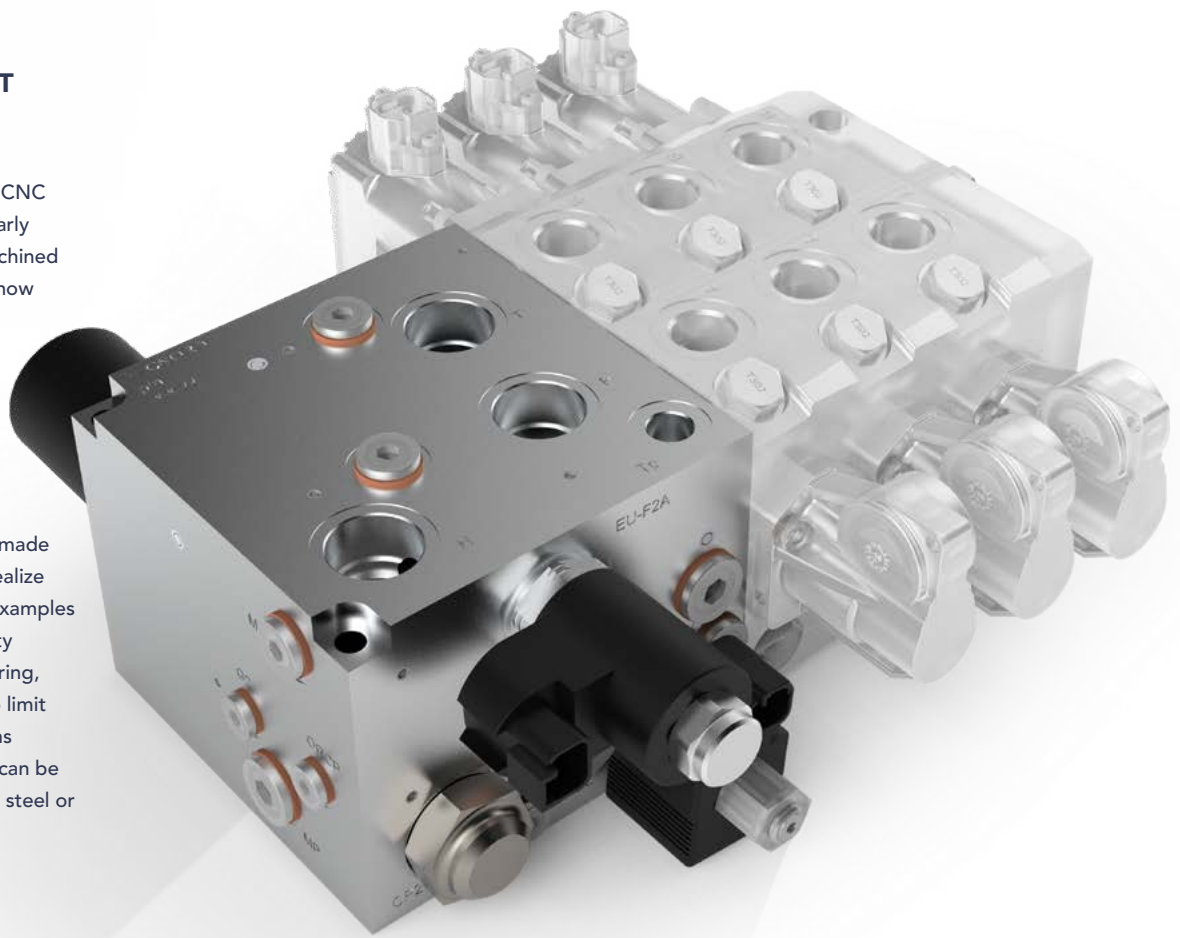
Port relief valve standard settings: 70-100-120-140-160-180-200-220-240-260-280 different settings available on request

HYDRAULIC SCHEMATIC



**CUSTOMIZED INLET BLOCKS**

With 29 R&D engineers, 14 CNC machining centres and a yearly production of 145.000+ machined blocks, Tecnord owns the know how and capacity to manufacture customized inlet blocks for TDV100 sections, with a tailor-made hydraulic scheme, according to the required application. The wide range of Tecnord made cartridge valves allows to realize every possible schematic. Examples of functions could be priority steering valve, gravity lowering, P line cut-off; but there's no limit in the schemes and functions Tecnord can realize. Blocks can be manufactured in aluminium, steel or cast iron.

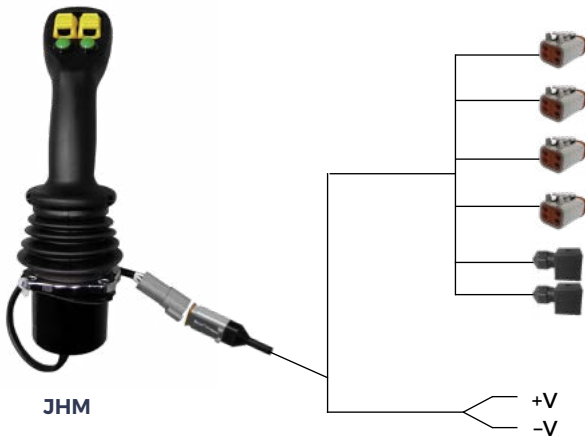


**APPLICATIONS**



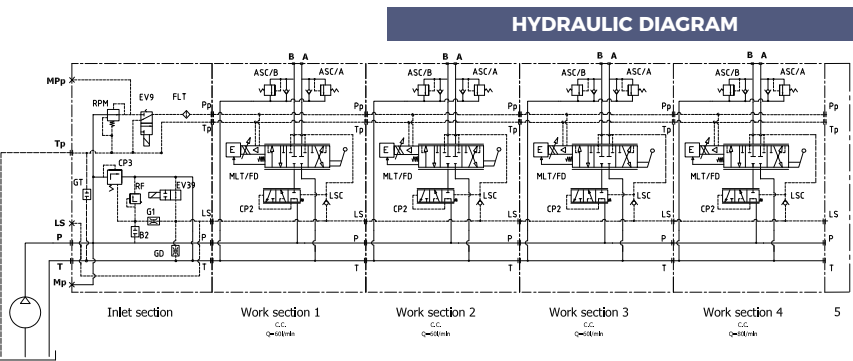
**TDV100 TECNORD DIRECTIONAL VALVE WITH MLT/FD5 CLOSED LOOP POSITION ACTUATOR SYSTEM**

TDV100-MLT-4F Directional/Proportional stackable control valve with load sense and MLT/FD5-CLOSED LOOP/PILOT OPERATED remote control system



**TDV100-MLFD**  
Proportional directional systems with electro-hydraulic proportional actuator and built-in electronics

MEDIUM-SIZE TELEHANDLERS



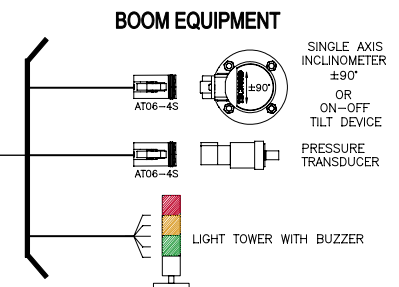
CRANES

**RETROFITTING CONTROL SYSTEM**

MLT/CE16 Electro-hydraulic Remote Control System for truck mounted/knuckle boom cranes. the system is equipped with LMI (Rated Capacity Indicator) for overturning moment control



CRANES





### PWM DRIVERS

Microprocessor - based programmable electronic drivers



### FINGERTIP PROPORTIONAL LEVERS

Potentiometric and hall effect single-axis control levers and roller switches



### ERGONOMIC GRIPS

Multi-function ergonomic grips with on-off and proportional switches



### HEAVY DUTY JOYSTICKS

Potentiometric and hall effect multi-axes control joysticks



### MACHINE MANAGEMENT SYSTEMS

Microprocessor-based MMS for the integrated control of electro-hydraulic and safety functions



### ECOMATIC

GPS ground-speed oriented salt spreader control systems



### 4/6 FUNCTIONS SHW RADIO

Combined on-off and proportional radio control system with single hand wand



### 4/6 FUNCTIONS PTM RADIO

Multi-function proportional radio control with shoulder-strap transmitter and CANbus receiver



### ARM-REST CONTROLLER

Arm-rest control unit for hedge cutter