Related
Fluid Power

TDV30 Series
Directional Proportional Control Valve System

## Stackable Directional Control Valve

- Size 6
- Load sensing pressure compensated
- Fixed or variable displacement configuration
- 1 to 8 working sections in the same valve bank

Electro-hydraulic controls

- **PMD** Multi-function/direct acting
  non feedback proportional solenoids

- **OMD** Multi-function/ON-OFF solenoids with
  individual adjustment of flow rate on A&B ports

Manual control options

- **LM** Manual control lever
- **MO** Push pin manual override
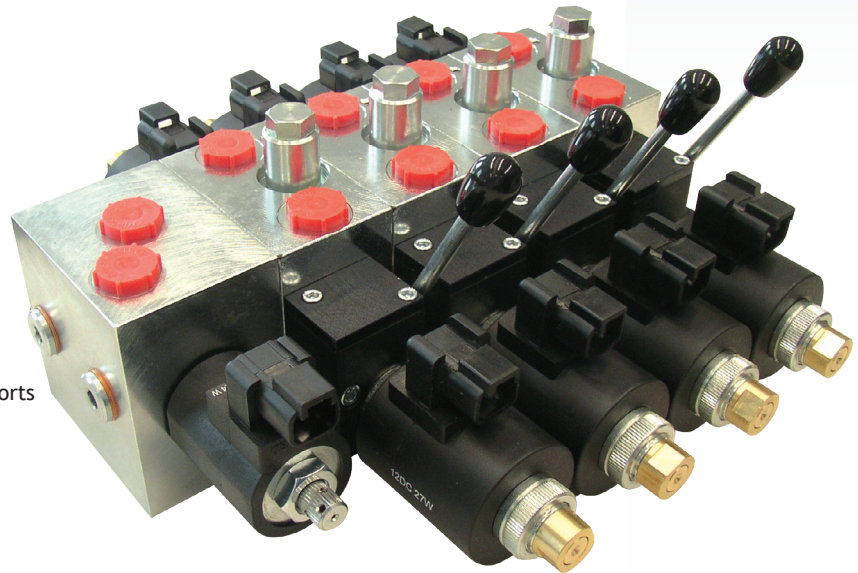
Principle of operation

The **TDV-PMD** is a closed center, load sensing, sectional valve with pressure compensation of each section assembly. Depending on the configuration of the inlet section, the TDV 30 valve system can be used with FIXED DISPLACEMENT pumps or with pressure/flow compensated load sensing VARIABLE DISPLACEMENT pumps.
When multiple functions are selected, the **TDV-30 valve** system will automatically resolve the highest function load pressure, which is then transmitted to the inlet unloader (by-pass pressure compensator) of a fixed displacement pump or to the pressure/flow compensator element of an automatic variable displacement pump.
TDV-30 valve banks come with a system relief valve and with a drain orifice to ensure LS pressure drains once all spools are returned to neutral.
Work port pressure limiting is accomplished by using auxiliary anti-shock/anti-cavitation valves at each port.

Hydraulic Specifications

- Max. operating flow: 50 lt/min
- Max. flow per section: 27 lt/min
- Max. work pressure: 250 bar
- Inlet pressure compensator setting: 16 bar
- Max. back pressure at T port: 100 bar
- Max. static pressure at T port: 250 bar
- Typical internal leakage (per path):   25 cu cm/min @ 100 bar
- Media operating temperature range: -15˚C/+105˚C
- Max. contamination level: 19/16 (ISO 4406)
- Fluid viscosity range: 20-480 cSt
- Seals: Buna-N (Std.)
                                                                  Viton (Opt.)

Electrical Specifications

- Nominal coil voltage: 12/24 VDC
- Supply voltage tolerance: ±15% of nominal
- Coil ohmic resistance: 5/20 Ohm
- Max. control current: 900/1800 mA
- C/current characteristic: PWM (Pulse With Modulated)
- Optimum dither frequency: 100-150 Hz
- Coil duty cycle: 100%
- Ambient temperature range: -15˚C/+95˚C
- Env. protection class: IP 65
- Coil termination: DT= deutsch DT 04
                                                    AJ= AMP Junior Timer
                                                    HC= DIN 43650 (Hirschmann)

Directional Proportional Control Valve System
TDV 30

Inlet section designation

TDV 31 - IFCLG38 - C15R25 - E49 - 12VDT - NNN

Inlet section				3 digits var.

**IFC=** with pump unloader valve for fixed
displacement pumps
IV0= without pump unloader valve
for variable displacement pumps
LG38= 3/8"-BSP

C15= 15 bar unloader valve setting
C00= no unloader valve
R07= 70 bar min. relief valve setting
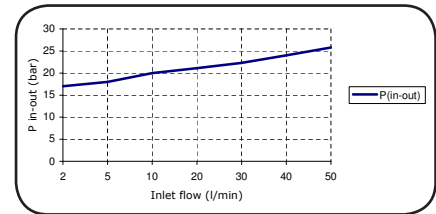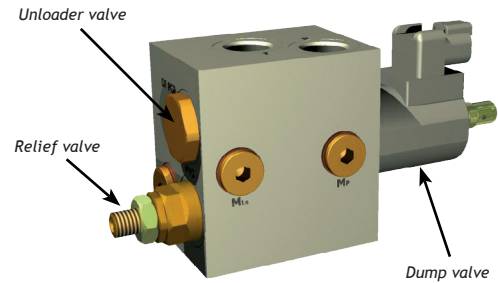**R25=** 250 bar max. relief valve setting

0000= w/o dump valve
E49= with dump valve

12V= 12VDC
24V= 24VDC
DT= Deutsch connector

Unloader valve

Relief valve

Dump valve
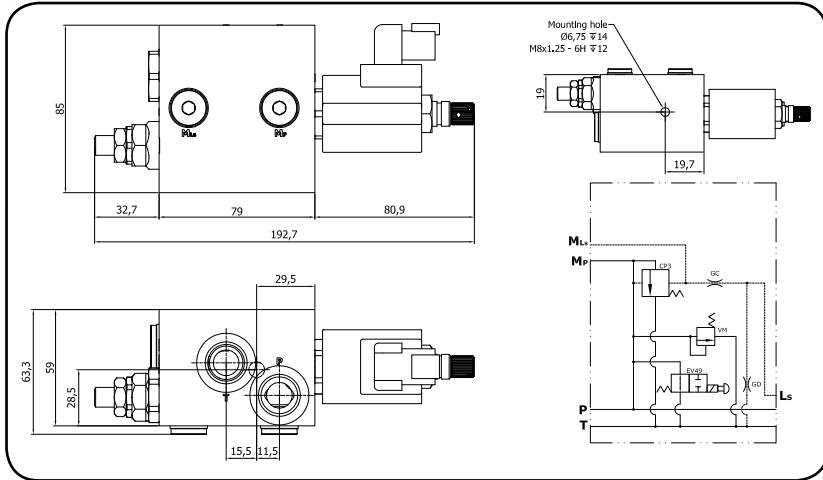
IFC/IV0 inlet section

**Inlet to outlet stand-by differential pressure (bar)
vs. pump flow (l/min)**

Work section designation

TDV 32 - PMDG38 - LM - A07B12 - Y30 - 12VDT - NNN

Work section				3 digits var.

PMD= pressure compensed Proportional
control
OMD= pressure compensed on-off control
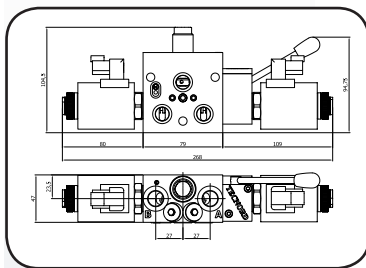**G3=** 3/8" BSP

LM= manual lever
MO= dual manual override

00= no ASC valve
A07= ASC valve on port A/70 bar
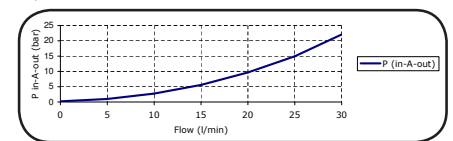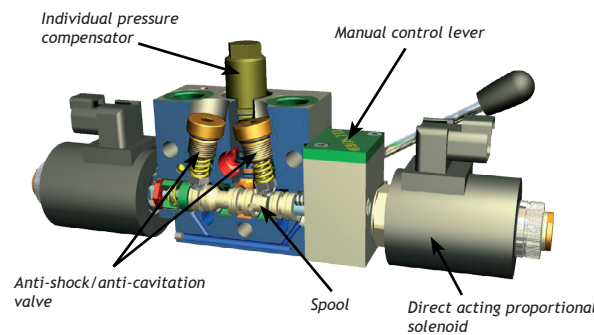**B12=** ASC valve on port B/120 bar
AB= ASC valves on A&B

X= closed center spool   **08=** 0-12 l/min
Y= motor spool   **16=** 0-18 l/min
K= semi-motor spool   **30=** 0-30 l/min
S= single effect spool

12V= 12VDC
24V= 24VDC
DT= Deutsch connector

Individual pressure compensator

Manual control lever

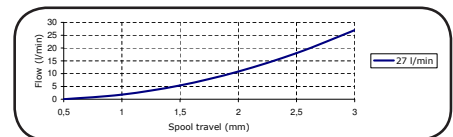Anti-shock/anti-cavitation valve
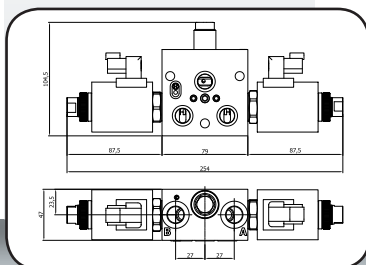
Spool

Direct acting proportional solenoid

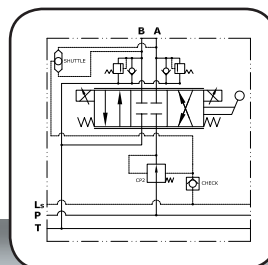**TDV 32 – PMD – LM – A07B12 – Y27 – 12DT**
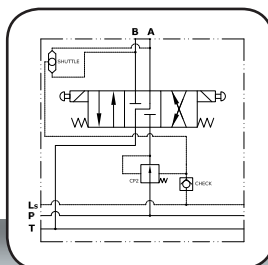
Work port flow (l/min) vs. spool travel (mm)

**Inlet (P) to outlet (T) pressure drop (bar)
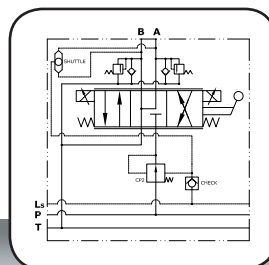@ full flow (l/min) through work ports A&B**
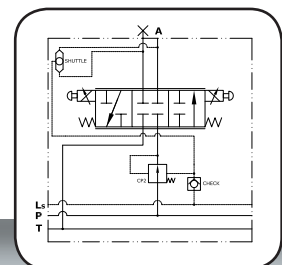
TDV 32 – PMD – MO – 00 – Y27 – 12DT

TDV 32-PMD-LM-A07B12-X27-12DT
Proportional/Closed center spool/ASC valves

TDV 32-OMD-MO-00-K27-12DT
On-off/Semi-motor spool/No aux. valves

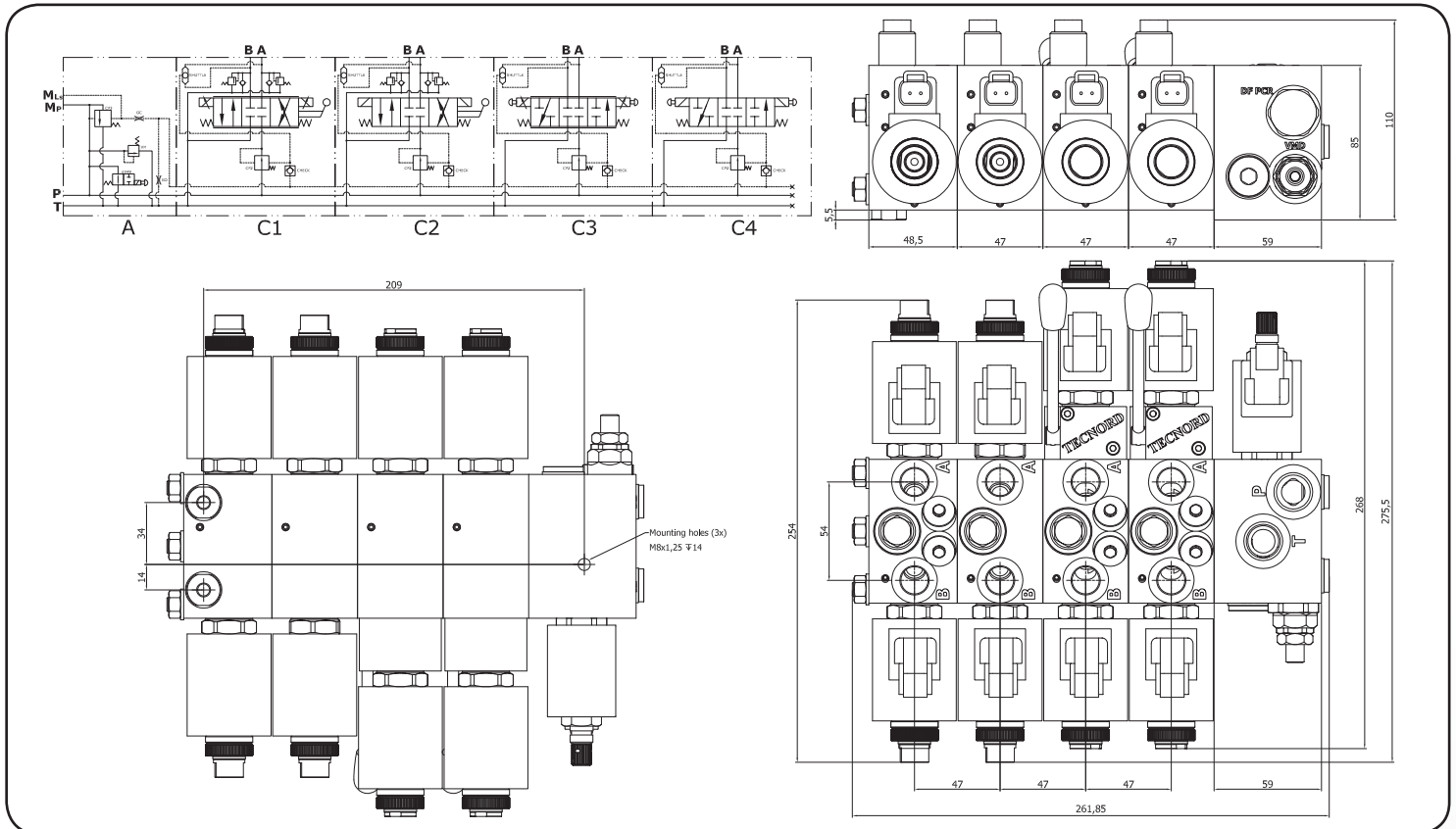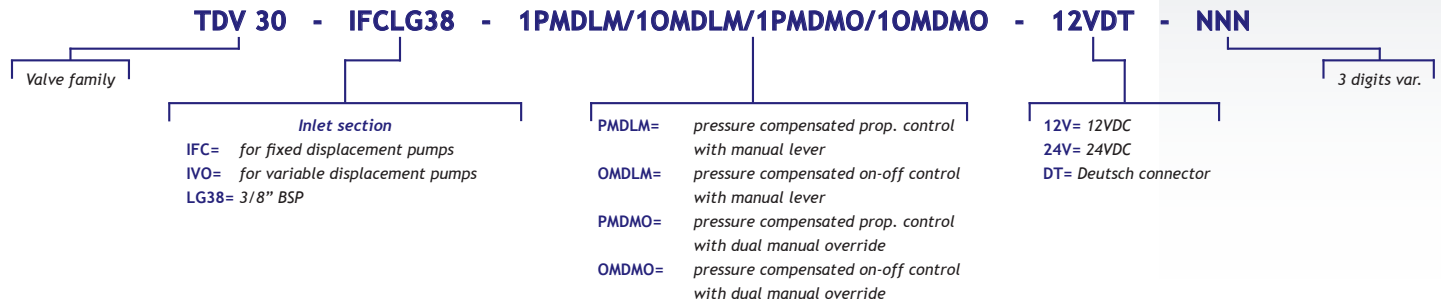**TDV 32-PMD-LM-A07B12-Y27-12DT**
Proportional/Motor spool/ASC valves

TDV 32-PMD-MO-00-S27-12DT
Proportional/Motor spool/No aux. valves

Stackable valve designation example (ordering code)

TDV 30 - IFCLG38 - 1PMDLM/1OMDLM/1PMDMO/1OMDMO - 12VDT - NNN

Valve family

3 digits var.

Inlet section
IFC= *for fixed displacement pumps*
IVO= *for variable displacement pumps*
LG38= *3/8" BSP*

PMDLM= *pressure compensated prop. control with manual lever*
OMDLM= *pressure compensated on-off control with manual lever*
PMDMO= *pressure compensated prop. control with dual manual override*
OMDMO= *pressure compensated on-off control with dual manual override*

12V= *12VDC*
24V= *24VDC*
DT= *Deutsch connector*

TDV 30 – IFCLG38 – 1PMDLM/1OMDLM/1PMDMO/1OMDMO – 12VDT

Hydraulic and electrical characteristics of operating parts

Position	A	C1	C2	C3	C4
Mnemonic code	IFC / IVO	PMDLM	OMDLM	PMDMO	OMDMO
Part description	Inlet section	Spool section	Spool section	Spool section	Spool section
Hydraulic configuration	Fixed or variable displacement pump	Manual lever control X/Y/K/S spool proportional actuator	Manual lever control X/Y/K/S spool on-off actuator	Dual manual override X/Y/K/S spool proportional actuator	Dual manual override X/Y/K/S spool on-off actuator
Typical flow rate	50 l/min	8/16/30 l/min	8/16/30 l/min	8/16/30 l/min	8/16/30 l/min
Max. work pressure	280 bar	280 bar	280 bar	280 bar	280 bar
Pressure compensator setting	16 bar	14 bar	14 bar	14 bar	14 bar
Port threads	3/8" BSP	3/8" BSP	3/8" BSP	3/8" BSP	3/8" BSP
	9/16"-18 UNF (SAE6)	9/16"-18 UNF (SAE6)	9/16"-18 UNF (SAE6)	9/16"-18 UNF (SAE6)	9/16"-18 UNF (SAE6)
Number of sections in the assembly	1	1-8	1-8	1-8	1-8
Electrical configuration	Electro-hydraulic	Proportional control	On-off control	Proportional control	On-off control
Supply voltage	12-24 VDC	//	12-24 VDC	//	12-24 VDC
Max. current consumption	2A @ 12VDC 1A @ 24VDC	//	2,4A @ 12VDC 1,2A @ 24VDC	//	2,4A @ 12VDC 1,2A @ 24VDC
Ohmic resistance	//	5 Ohm (12VDC) 20 Ohm (24VDC)	5 Ohm (12VDC) 20 Ohm (24VDC)	5 Ohm (12VDC) 20 Ohm (24VDC)	5 Ohm (12VDC) 20 Ohm (24VDC)
Typical control current range	//	0-1,8A (12VDC) 0-0,9A (24VDC)	//	0-1,8A (12VDC) 0-0,9A (24VDC)	//
PWM dither	//	100-150Hz	//	100-150Hz	//

EC – PWM – A1 – MPC1
Microprocessor – based PWM
electronic driver

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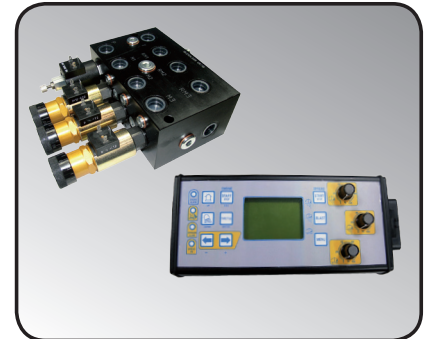single-axis control levers and roller
switches

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

Heavy duty joysticks
Potentiometric and hall effect
multi- axes control joysticks

EC MMS
Microprocessor-based Machine Manage-
ment Systems for the integrated control
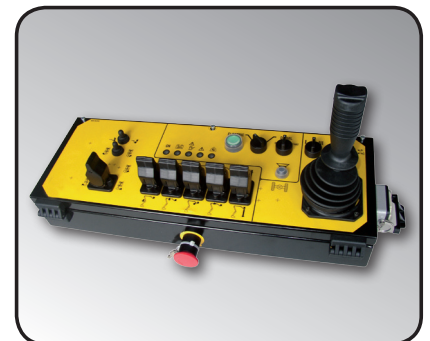of electro-hydraulic and safety functions

Ecomatic
GPS ground-speed oriented salt
spreader control systems

RC – DBR
Combined on-off and proportional radio
control system with single hand wander

RC – PCM
Multi-function proportional radio
control system with shoulder-strap
transmitter

Customized control units
Customized microprocessor-based,
multi-functions control units

Related
Fluid Power