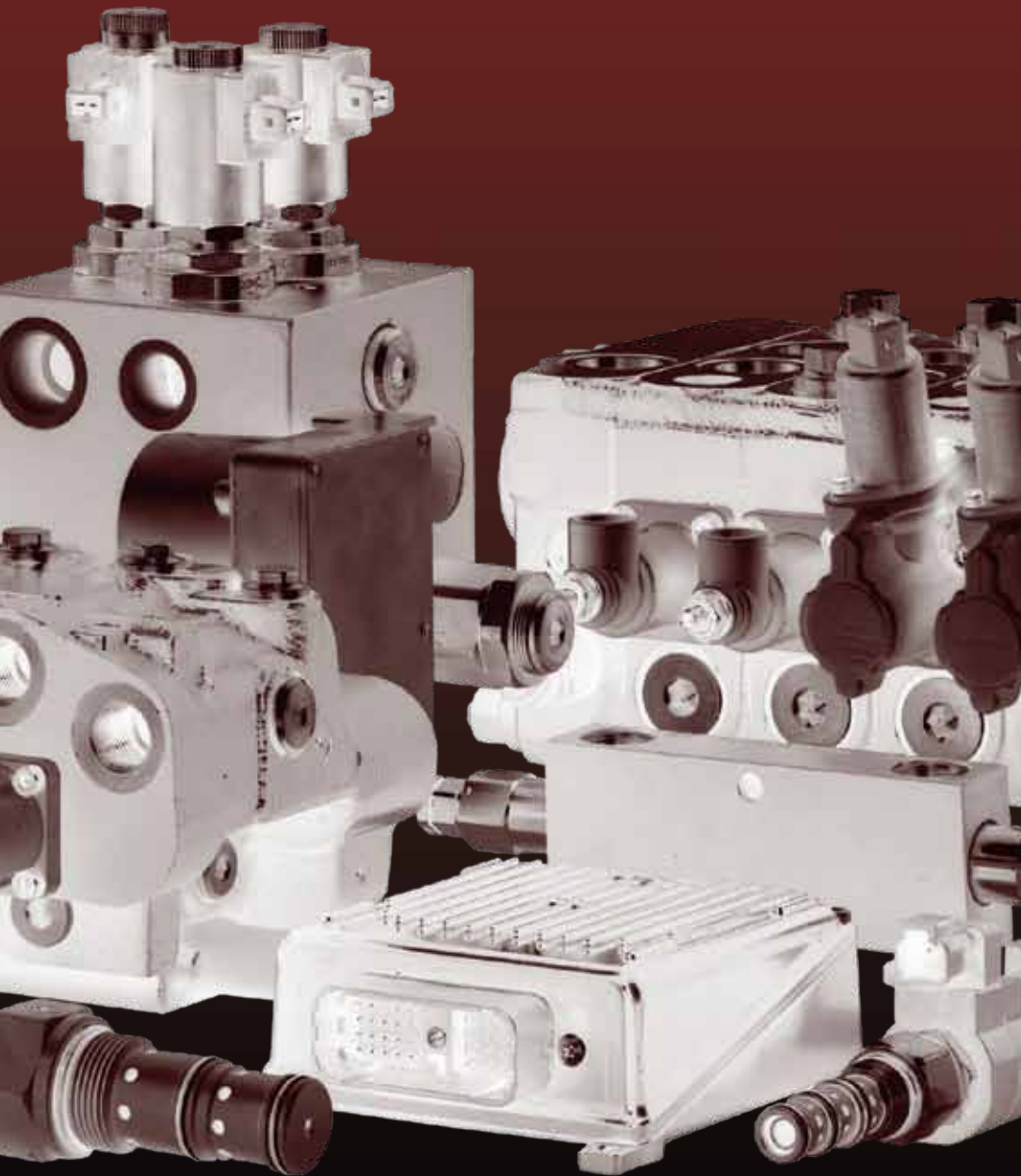


O V E R V I E W II

PROGRAMMA DI PRODUZIONE
PRODUCT INFORMATION





W1 Sede principale
W1 Headquarters

FRANCIA: **WALVOIL FLUID POWER**

USA: **WALVOIL FLUID POWER**

COREA: **WALVOIL FLUID POWER**
KWA

INDIA: **WALVOIL FLUID POWER**

CINA: **WALVOIL FLUID POWER SHANGHAI CO**



W3 New

Insieme per progettare il futuro *Together, to build the future*

Walvoil è uno dei principali produttori mondiali di valvole oleodinamiche e di sistemi meccatronici completi per il mercato del macchinario mobile.

Sviluppiamo e realizziamo prodotti e sistemi per controllare idraulicamente ed elettronicamente ciò che ruota attorno al movimento.

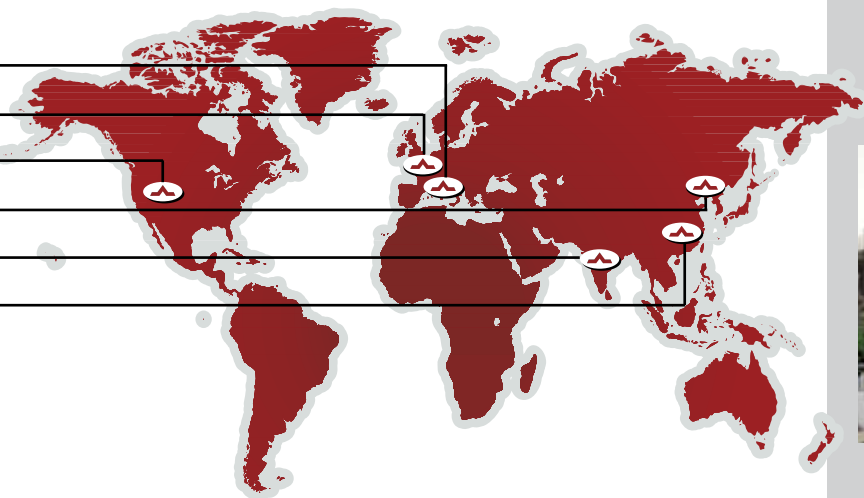
Lo facciamo attraverso l'ascolto, l'attenzione, la professionalità e le competenze in evoluzione costante, che mettiamo a disposizione di clienti e partners che operano in settori e mercati diversi.

Walvoil is one of the world's leading manufacturers of hydraulic valves and complete mechatronic systems for the mobile equipment market. We design and develop products and systems to provide hydraulic and electronic control of nearly any hydraulic function dealing with machine movement.

To achieve these results, we listen closely and focus our attention to our clients' requirements, provide consistent communication in order to apply our technical and production skills to the benefit of our entire client and market partners.

principale
partners

WALVOIL S.p.a.
WALVOIL POWER FRANCE
VRITZ
WALVOIL POWER CORPORATION
TULSA (Oklahoma)
WALVOIL POWER KOREA LCC
KWANGJU OF KYUNG-GI
WALVOIL POWER (INDIA) PVT. LTD.
BANGALORE
WALVOIL POWER COMPANY LIMITED
SHANGHAI



Walvoil Fluid Power Corporation
Tulsa - Oklahoma



Walvoil Fluid Power Korea LCC
Kwangju of Kyung-Gi



Walvoil Fluid Power India PVT. LTD.
Bangalore



Walvoil Fluid Power Shanghai Company Limited
Shanghai



W3 Nuovo polo produttivo
New production and logistic pole





I settori nei quali interveniamo, mettendo a disposizione un'ampia ed integrata gamma di prodotti sono:

- **macchine agricole**
- **macchine movimento terra**
- **macchine edili**
- **veicoli industriali**
- **sollevamento e trasporto**
- **applicazioni industriali**
- **applicazioni speciali**



Le nostre radici ci sostengono anche nel mettere in pratica una quotidiana ed autentica propensione alla flessibilità e all'efficienza, il cui risultato sono soluzioni personalizzate, ove richieste, ed elevate affidabilità e competitività. Disponiamo infatti di un'ampia ed integrata gamma di prodotti dedicati e testati per ogni singola applicazione.

Attraverso le ultime novità inserite in produzione, Walvoil ha inteso sviluppare un'importante esperienza nell'utilizzo dell'elettronica applicata all'oleodinamica. In ambito di applicazioni, la nostra offerta al mercato si arricchisce della storica partnership con Casappa Spa, produttrice di pompe, motori e filtri idraulici.



We are involved in the following market sectors we have been providing a broad and integrated range of products to:

- **agricultural machines**
- **earth moving machines**
- **construction and mining equipment**
- **industrial vehicles**
- **lifting and transport**
- **industrial equipment**
- **special applications**



Our background further enhances our vocation and commitment to implementing a consistent and authentic trend to flexibility and efficiency resulting into successful customized products and high reliability and competitiveness.

We provide a broad and integrated range of products that can always be specialized and certified for every single application.

Through the last news included in production, Walvoil has intended to develop an important experience in the use of electronics applied to mobile hydraulics. Our systems approach to an application is enriched thanks to our consolidated partnership with Casappa pumps, motors and filters.



I prodotti Product range

Distributori oleodinamici Directional control valves



- **Monoblocco** pag. 6
Monoblock valves page 6
- **Componibili** pag. 7
Sectional valves page 7
- **Load-Sensing pre-compensati e Flow Sharing** pag. 8
Pressure pre-compensated Load-Sensing and Flow Sharing valves page 8
- **Deviatori di flusso** pag. 9
Diverter valves page 9
- **Direzionali elettrici** pag. 10
Directional control valves with direct acting solenoid page 10

Sistemi di controllo e comando Pilot and control devices



- **Servocomandi e unità di alimentazione** pag. 11
Pilot control valves and feeding unit page 11
- **Sistemi elettronici** pag. 13
Electronic systems page 13
- **Impugnature e accessori** pag. 14
Handles and accessories page 14

Valvole oleodinamiche Hydraulic valves



- **Valvole con corpo** pag. 15
Parts in body page 15
- **Cartucce cavità SAE** pag. 21
SAE cartridge valves page 21

Blocchi integrati (HICs) Hydraulic integrated circuit

- **Blocchi integrati** pag. 25
Hydraulic integrated circuit page 25

Monoblocco - Monoblock valves


Tipo Type	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)	Numero sezioni Nr. of sections	Filettature standard* Standard threads* BSP (ISO 228/1) UN-UNF (ISO 11926-1)		Catalogo di riferimento Reference catalogue
SDM080	25-6.6	315-4600	1÷6	G 1/4	SAE 6	DAT001I/A
SDM081	25-6.6	315-4600	1÷6	G 1/4	SAE 6	DAV010IA
SD4	45-12	250-3600	1	G 3/8	SAE 6	DAC002I/A
SD5	45-12	315-4600	1÷7	G 3/8	SAE 6	DAU003I/A
SDM105	45-12	315-4600	1	G 3/8	SAE 6	DAU003I/A
SDM110	45-12	315-4600	1÷6	G 3/8	SAE 6	DAV012IA
SDM100	70-18	315-4600	1÷8	G 3/8	SAE 8	D1WWDA02I/A
SD11	70-18	315-4600	1÷6	G 1/2	SAE 8	DAT004I/A
SDM140	80-21	315-4600	1÷6	G 1/2	SAE 10	DAU007I/A
SD14	120-32	250-3600	1	G 3/4	SAE 12	DAC005I/A
SD18	160-42	250-3600	1÷6	G 3/4	SAE 12	DAT006I/A
Configurazione Load-Sensing - Load-Sensing valves configuration						
DLM140	110-29	250-3600	1÷6	G 1/2	SAE 10	DAU007I/A

Specifici per applicazioni - Designed for
Caricatori frontali - Front-loaders application

SDM102	45-12	250-3600	2	G 3/8	SAE 6	DAT011I/A
SDM103	45-12	250-3600	2	G 3/8	SAE 6	DAV007IA
SDM122	80-21	250-3600	2	G 1/2	SAE 10	D1WWEA01I/A
SDM143	80-21	250-3600	2	G 1/2	SAE 10	DAT009I/A

Caricatori frontali: configurazione Load-Sensing - Front-loaders application: Load-Sensing configuration

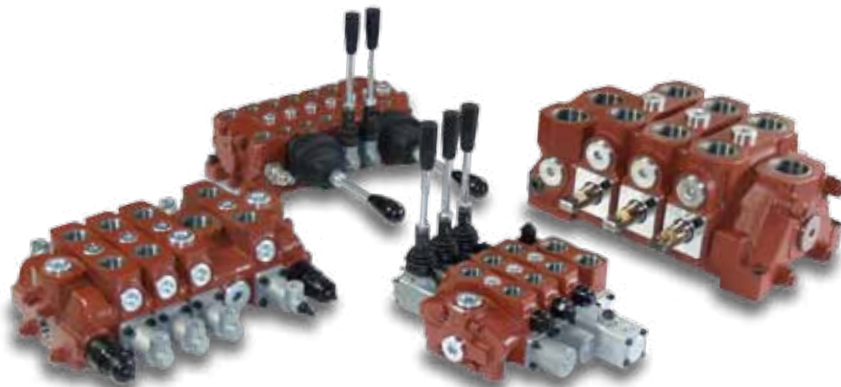
DLM122	80-21	250-3600	2	G 1/2	SAE 10	D1WWEA01I/A
DLM142	80-21	250-3600	2	G 1/2	SAE 10	DAT010I/A

Specifici per applicazioni su mini pale cariatrici - Designed for skid-steer loaders applications

SDM141	80-21	250-3600	3	G 1/2	SAE 10	DAT008I/A
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Note/Notes

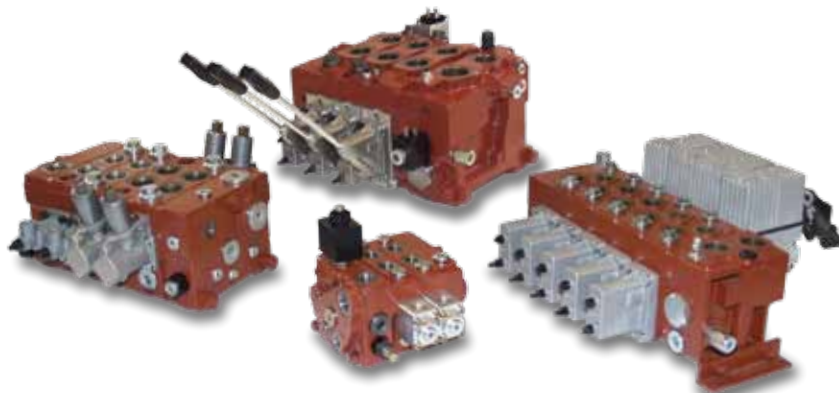
(*) : Filettatura metrica su richiesta/Metric thread is available on request

Componibili - *Sectional valves*

Tipo Type	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)	Numero sezioni Nr. of sections	Filettature standard* Standard threads*		Catalogo di riferimento Reference catalogue
				BSP (ISO 228/1)	UN-UNF (ISO 11926-1)	
SD6	45-12	315-4600	1÷12	G 3/8	SAE 6	DBU001I/A
SDS100	60-16	315-4600	1÷10	G 3/8	SAE 8	DBT001I/A
SD8	80-21	315-4600	1÷12	G 1/2	SAE 8	DBU002I/A
SDS150	90-24	315-4600	1÷12	G 1/2	SAE 10	DBC003I/A
SDS180	160-42	315-4600	1÷12	G 3/4	SAE 10	D1WWDB01I/A
SD25	240-63	315-4600	1÷12	G 1	SAE 16	DBC005I/A
NEW SDS400	400-105	315-4600	1÷10	G 1 1/4	SAE 20	D1WWCB02I/A
Configurazione Load-Sensing - Load-Sensing valves configuration						
DLS7	60-16	315-4600	1÷10	G 3/8	SAE 6	DBU001I/A
DLS8	100-26	315-4600	1÷10	G 1/2	SAE 8	DBU002I/A
DLS180	160-42	315-4600	1÷10	G 3/4	SAE 12	

Note/Notes

(*) : Filettatura metrica su richiesta/Metric thread is available on request

Load-Sensing pre-compensati e Flow Sharing - Pressure pre-compensated Load-Sensing and Flow Sharing

Distributori Load-Sensing pre-compensati - Pressure pre-compensated Load-Sensing valves

Tipo Type	Portata nominale Nominal flow			Pressione massima Max. pressure	Numero sezioni Nr. of sections	Filettature standard* Standard threads*		Catalogo di riferimento Reference catalogue
	in ingresso on inlet (l/min-US gpm)	sugli utilizzi-on ports				BSP (ISO 228/1)	UN-UNF (ISO 11926-1)	
		non compensati not compensated (l/min-US gpm)	compensati compensated (l/min-US gpm)					
DPC130	150-40	130-34	100-26	315-4600	1÷10	G 1/2	SAE 10	DDT010I/A
DPC200	260-68	240-63	200-53	420-6100	1÷10	G 1	SAE 10	D1WWCD02I/A

Distributori Flow Sharing - Flow Sharing valves

Tipo Type	Portata nominale Nominal flow		Pressione massima Max. pressure	Numero sezioni Nr. of sections	Filettature standard* Standard threads*		Catalogo di riferimento Reference catalogue
	in ingresso on inlet	sugli utilizzi on ports			BSP	UN-UNF	
	(l/min-US gpm)	(l/min-US gpm)	(bar-psi)	(ISO 228/1)	(ISO 11926-1)		
DPX050	80-21	50-13	300-4350	1÷12	G 3/8	SAE 8	D1WWCD01I/A
DPX100	120-32	90-24	300-4350	1÷12	G 3/8	SAE 8	D1WWDD01I/A
DPX100HP	120-32	90-24	420-6100	1÷12	G 3/8	SAE 8	D1WWCD01I/A
DPX160	230-61	160-42	300-4350	1÷10	G 3/4	SAE 12	D1WWDD02I/A
DPX160HP	230-61	160-42	420-6100	1÷10	G 3/4	SAE 12	

Note/Notes

(*) : Filettatura metrica su richiesta/Metric thread is available on request

Deviatori di flusso - Diverter valves


Tipo Type	Portata nominale (condizioni statiche)	Pressione nominale (condizioni statiche)	Nr. di vie	Filettature standard		Catalogo di riferimento Reference catalogue
	Nominal flow (static working conditions)	Operating pressure (static working conditions)	Nr. of ways	BSP	UN-UNF	
	(l/min-US gpm)	(bar-psi)		(ISO 228/1)	(ISO 11926-1)	
A comando meccanico rotativo - <i>Mechanical rotary spool control</i> ▲						
DH5	60-16	315-4600	3/4/6/8	G 3/8	SAE 8	DGR002I/A
DH10	90-24	315-4600	3/4/6/8	G 1/2	SAE 10	DGR002I/A
DH20	140-37	315-4600	3/4/6/8	G 3/4	SAE 12	DGR002I/A
DH25	200-53	250-3600	3/4/6/8	G 1	SAE 16	DGR002I/A
DH30	280-74	210-3050	3/6	G 1 1/2	SAE 24	DGR002I/A
A comando meccanico - <i>Mechanical spool control</i>						
DF5	60-16	315-4600	2/3/6	G 3/8	SAE 8	DGR002I/A
DF10	90-24	315-4600	2/3/6	G 1/2	SAE 10	DGR002I/A
DF20	140-37	315-4600	2/3/6	G 3/4	SAE 12	DGR002I/A
DF25	280-74	315-4600	3	G 1	SAE 16	DGR002I/A
A comando elettrico monoblocco - <i>Solenoid operated monoblock type</i>						
DFE052	60-16	200/315*-2900/4600*	2/3/6/8	G 3/8	SAE 8	DGR002I/A
DFE10	90-24	200/315*-2900/4600*	3/6	G 1/2	SAE 10	DGR002I/A
DFE20	140-37	200/315*-2900/4600*	3/6	G 3/4	SAE 12	DGR002I/A
A comando elettrico componibile - <i>Solenoid operated sectional type</i>						
DFE080	25-6.6	200/315*-2900/4600*	6/8/10	G 1/4	SAE 4	DGR002I/A
DFE100	50-13	200/315*-2900/4600*	6/8/10	G 3/8	SAE 8	DGR002I/A
DFE140	80-21	200/315*-2900/4600*	6/8/10	G 1/2	SAE 10	DGR002I/A
Specifici per applicazioni su caricatori frontali - <i>Designed for front-loaders application</i>						
DFE141	80-21	315-4600	6/8	G 1/2		DGV005IA
DFE110	90-24	200/315*-2900/4600*	12	G 1/2	SAE 10	DGR002I/A
Specifici per applicazioni sterzature - <i>Designed for steering application</i>						
DFE085	25-6.6	210-3050	4	G 3/8	SAE 8	D1WWCG01I/A
Specifico per selezione logica di comando - <i>Designed for joystick pattern selection</i>						
DHV080	10-2,6	100-1450	8	G 1/4	SAE 4	DGV001IA

Note/Notes: (*): Con drenaggio/With drain.

(▲): i deviatori DH possono essere azionati solo in assenza di pressione (max. 25 bar)/DH rotary spool diverter valves can only be operated without pressure (max 25 bar/360 psi).

Direzionali elettrici - *Directional control valves with direct acting solenoid*



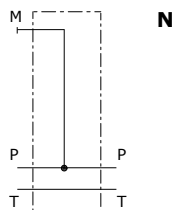
Tipo Type	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)	Numero sezioni Nr. of sections	Filettature standard* Standard threads*		Catalogo di riferimento Reference catalogue
				BSP (ISO 228/1)	UN-UNF (ISO 11926-1)	
NEW SDE030	30-8	315-4600	1÷9	G 3/8	SAE 8	D1WWEB02I/A
NEW SDE060	60-16	315-4600	1÷9	G 3/8	SAE 8	D1WWEB02I/A

Note/Notes (*):

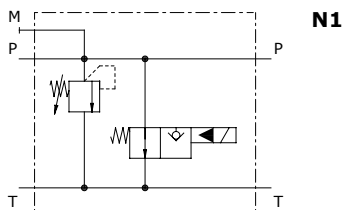
(*): Filettatura metrica su richiesta/Metric thread is available on request.

Molteplicità di fiancate realizzabili su misura per le varie richieste ed applicazioni.
Custom inlet covers are available for different applications.

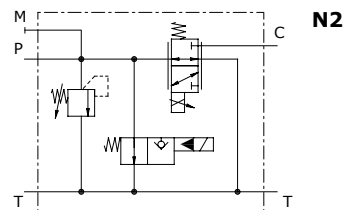
Sezioni di entrata:
Basic inlet sections:



N senza valvole in ingresso
N without valves



N1 con valvola di massima e valvola di messa a scarico a pilotaggio elettrico
N1 Inlet section with main relief valve and solenoid unloader valve



N2 con valvola di massima e regolatore di portata compensato a 3 vie proporzionale a comando elettrico/manuale
N2 inlet section with main relief valve and compensated flow control with 3 way proportional manual/solenoid control

Servocomandi e unità di alimentazione - Pilot control valves and feeding unit

Servocomandi idraulici - Hydraulic pilot control valves

Tipo Type	Caratteristiche Features	Nr. utilizzi Nr. of ports	Portata nominale Nominal flow (l/min-Us gpm)	Pressione di alimentazione* Inlet pressure* (bar-psi)	Filettature standard** Standard threads** BSP (ISO 228/1) UN-UNF (ISO 11926-1)	
Con azionamento a leva lineare - <i>Linear operation type</i>						
SVM100	componibile 1÷10 sezioni, P-T laterali <i>sectional 1÷10 sections, side P-T</i>	2÷20	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM101	componibile 1÷10 sezioni <i>sectional 1÷10 sections</i>	2÷20	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM150	aggancio elettromagnetico <i>electromagnetic detent</i>	2	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
Con azionamento a joystick - <i>Joystick operation type</i>						
SVM400	leva joystick - <i>joystick</i>	4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM400-EMD	aggancio elettromagnetico <i>electromagnetic detent</i>	4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM430		4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM431		4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM432		4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM450	aggancio elettromagnetico <i>electromagnetic detent</i>	4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
Con azionamento combinato - <i>Linear and joystick operation type</i>						
SVM600	aggancio elettromagnetico <i>electromagnetic detent</i>	6	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
Con azionamento a pedale - <i>Foot-pedal operation type</i>						
SVM500	pedale basculante - <i>rocker pedal</i>	2	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM510	pedale singolo, P-T laterali <i>single pedal, side P-T</i>	1	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM520	pedale doppio, P-T laterali <i>double pedal, side P-T</i>	2	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM540	doppio pedale basculante, bocche laterali <i>double rocker pedal, side ports</i>	4	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
Con azionamenti vari - <i>Several operation type</i>						
SVM700	a volantino, P-T laterali <i>hand wheel, side P-T</i>	1	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4
SVM710	a spintore, P-T laterali <i>pusher, side P-T</i>	1	da 5 a 20 <i>1.3 to 5.3</i>	da 30 a 100 <i>435 to 1450</i>	G 1/4	SAE 4

Note/Notes: Dove non diversamente specificato le bocche sono posizionate sul lato inferiore del comando/Ports are positioned on the pilot control valve bottom side if not differently specified. (*): Pmax = 30 bar, con aggancio elettromagnetico/Pmax = 30 bar/435 psi with electromagnetic detent. (**): filettature metriche disponibili a richiesta/Metric thread is available on request.

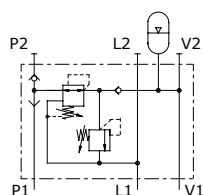
Catalogo di riferimento: D1WWEF01I - Ref. catalogue: D1WWEF01A

Servocomandi e unità di alimentazione - Pilot control valves and feeding unit

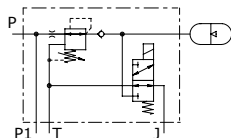
Unità di alimentazione - Feeding unit

Tipo Type	Nr. max ingressi Nr. of inlets	Pressione ingresso Max. input pressure (bar-psi)	Pressione secondaria Secondary pressure (bar-psi)	Nr. uscite Nr. of outlets	Capacità accumulatore Accumulator capacity (cm ³ -in ³)
AVN020	2	350-5100	30/40/50 435/580/725		35/75/90/150 2.13/4.58/5.49/9.15
FU/1	2	210-3050	30/40/50 435/580/725	1	320/19.53
FU/2	2	350-5100	30/40/50 435/580/725	2	320/19.53
FU/4	2	350-5100	30/40/50 435/580/725	4	320/19.53

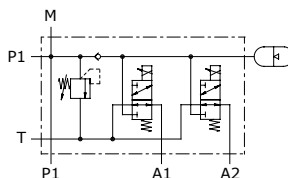
Catalogo di riferimento AVN: D1WWEF01I - AVN ref. catalogue: D1WWEF01A



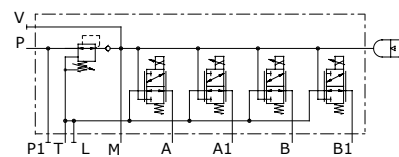
AVN020



**FU-AC(11)-RB08A(30)-
A-NV/1**



**FU-AC(11)-RB08A(35)-
F-NV/2RPT2**



**FU-AC(11)-RB08A(35)-
F-NV/4RPT2**

Servocomandi pneumatici - Pneumatic pilot control valves

Tipo Type	Esecuzione Configuration	Nr. utilizzi Nr. of ports	Posizione bocche Ports location P-T	Portata nominale Nominal flow (dm ³ /min-ft ³ /min)	Pressione di alimentazione Inlet pressure (bar-psi)	Filettature standard Standard threads NPTF (SAE J476A)
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Con azionamento a joystick - Joystick operation type

SP01	monoblocco monoblock	4	inferiore bottom	inferiore bottom	350-12.4	10-145	1/8 27
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Con azionamento a leva lineare - Linear operation type

SP10	monoblocco monoblock	2	laterale side	inferiore bottom	350-12.4	10-145	1/8 27
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SP30	componibile 1÷8 sezioni sectional 1÷8 sections	4÷16	laterale side	inferiore bottom	350-12.4	10-145	1/8 27
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Catalogo di riferimento: DFC020I - Ref. catalogue: DFC020A

Comandi meccanici a cavo flessibile - Flexible cable remote controls

Tipo Type	Esecuzione Configuration	Nr. di sezioni Nr. of sections	Interasse sezioni Section distance (mm - in)	Catalogo di riferimento Reference catalogue
TCC5	componibile-sectional	1÷7	40-1.57	DFC030I/A
TCC10	componibile-sectional	1÷7	45-1.77	DFC030I/A
SCF031	monoblocco-monoblock	2	/	DFV010IA

Note/Notes: cavo flessibile disponibile/flexible cables are available in different length.

Sistemi PHC - PHC systems



Servocomandi elettronici - Electronic joysticks

Caratteristiche - Features	MDN	MDT218	MDT230	UPD220
Analogico - Analogic	•	•		
CAN-bus			•	•
Segnale di uscita Signal range	25% ÷ 75% V batteria 25% ÷ 75% V battery	0.5 ÷ 4.5 V		
Assi proporzionali Prop. axis	1 ÷ 2	2 ÷ 5	2 ÷ 5	2
Pulsanti Push-buttons		fino a 9 up to 9	fino a 6 up to 6	3
Sensore di centro Center tap	•	•		
Gamma impugnatura Handles range		•	•	

Centraline elettroniche - Digital control units

Caratteristiche Features	CED110	CED340	CED100X	CED400X
Ingressi analogici analogic inlet	6	10	4	4
Ingressi digitali digital inlet	2	1	2 (6)	2 (4)
Uscite proporzionali proportional output	2	6	2	8
Uscite ON/OFF ON/OFF outlet	1	4		
CAN bus	•	•	•	•
RS232	•	•	•	•
ISOBUS		•	•	•

NEW

NEW

Impugnature e accessori - *Handles and accessories*



Impugnature e aste leva - *Handles and hand levers*

Tipo Type	Funzioni ON/OFF * ON/OFF functions *		Funzioni proporzionali * Proportional functions *	Uomo presente "Dead man" switch	Catalogo di riferimento Reference catalogue
	pulsante - push-button	rockers			
Serie 10	1	1			DHR001I/A
Serie J	1	1			DHR001I/A
Serie V	4	2			DHR001I/A
Serie H	8	2	1	•	DHR001I/A
Serie P	8	3	3	•	DHV008IA
Serie S	2		1		DHV009IA

Note/Notes: Le impugnature configurate con dispositivi elettrici sono progettate per essere alimentate esclusivamente in tensione continua; per le caratteristiche dei dispositivi di comando richiedere la documentazione tecnica relativa/handles with electric components accept direct current only. For control devices features ask for related technical catalogue.

(*): Si intende il numero massimo di funzioni/Ref. to max. number of functions.



Sensori - *Sensors*

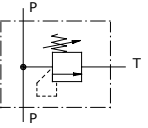
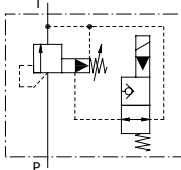
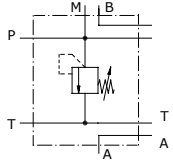
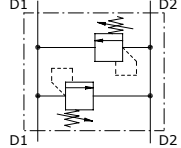
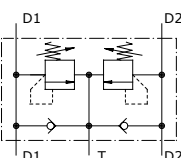
Tipo Type	Tensione nominale Voltage rating	Indice di protezione Weather protection	Interruttore a sfera Ball switch	Effetto hall Hall effect	LVDT	Uscita digitale Digital output	Uscita lineare Linear output	Portata uscita Output load
8MG3	da 5 a 24 VDC from 5 to 24 VDC	IP67	•			•		10 mA / 4A
SPSD	da 9 a 32 VDC from 9 to 32 VDC	IP67/IP69K		•		•		1 mA
SPSL	da 9 a 32 VDC from 9 to 32 VDC	IP67/IP69K		•			•	1 mA
8LZ3		IP67			•		•	

Catalogo di riferimento: D1WWCE01I - Ref. catalogue: D1WWCE01A

Valvole con corpo - Parts in body

Valvole limitatrici di pressione - Pressure relief valves

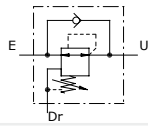
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VMP/B/L		azionamento diretto - <i>direct acting</i>	100-40
VMPP/B/L		azionamento pilotato - <i>pilot operated</i>	250-66
VMPD/B		azionamento differenziale - <i>differential piston type</i>	180-48
VMP/VE		pilotate con venting <i>electric venting</i>	250-66
PBL../VMP		piastra base con VMP cetop 3 / cetop 5 <i>subplate with VMP cetop 3 / cetop 5</i>	60-16
VAIL		antiurto diretta <i>direct acting, shock-resistant</i>	180-48
VADDL		antiurto differenziale <i>differential piston type, shock-resistant</i>	220-58
VAIL/VA		antiurto, anticavitazione, diretta <i>shock-resistant, anticavitation, direct acting</i>	100-26
VADDL/VA		antiurto, anticavitazione, differenziale <i>shock-resistant, anticavitation, differential</i>	180-48
VAA/RU/DL		antiurto, anticavitazione, regolazione unica <i>shock-resistant, anticavitation, single adjustment</i>	200-53

Catalogo di riferimento: D1WWEM01I - Ref. catalogue: D1WWEM01E

Valvole riduttrici di pressione - Pressure reducing valves

Pressione massima/Max. pressure: 350 bar/5100 psi

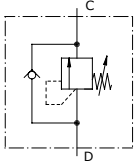
Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VRPRL		con funzione di relieving sull'utilizzo e ritorno libero <i>with relieving and reverse free-flow check</i>	50-13
VRPRL/U		con funzione di relieving sull'utilizzo e unidirezionale <i>with relieving</i>	50-13

Catalogo di riferimento: D1WWEN01I - Ref. catalogue: D1WWEN01A

Valvole con corpo - *Parts in body*

Valvole di sequenza - *Sequence valves*

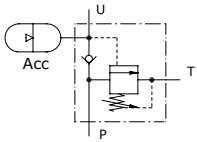
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VDSRL		azionamento diretto direct acting	120-32
VDSRL../APP		diretto ad annullamento della pressione primaria back-pressure proof	120-32
VDSD/B..		differenziale differential	200-53

Catalogo di riferimento: D1WWE001I - Ref. catalogue: D1WWE001A

Valvole di disinserzione automatica - *Unloader valve, built-in check, face mounting*

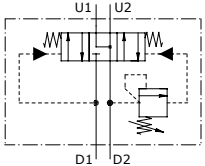
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VDA		in linea single acting	100-26
VDA/FL		flangiate face mounting	50-13

Catalogo di riferimento: D1WWE001I - Ref. catalogue: D1WWE001A

Valvole rigeneratrici di circuito - *Regenerative valves*

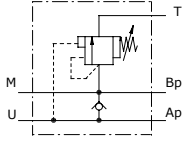
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VRCL/KD		in linea single acting	150-40

Catalogo di riferimento: D1WWE001I - Ref. catalogue: D1WWE001A

Valvole di esclusione alta-bassa pressione - *Two pump "hi-low" unloading valves*

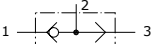
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VEP		in linea single acting	250-66
VEP/FC		flangiate su pompa face mounting on gear pump	150-40
VEP/FL		flangiatura cetop 3-5-7 cetop base 3-5-7	100-26

Catalogo di riferimento: D1WWE001I - Ref. catalogue: D1WWE001A

Valvole con corpo - Parts in body

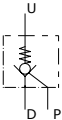
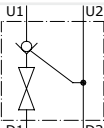
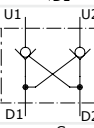
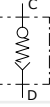
Valvole unidirezionali - Check valves

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)
VUS		a sfera-ball type	350-92	400-5800
VUC		a cono-poppet type	350-92	400-5800
VUS/INC		da incasso cartridge check valves	80-21	350-5100
VT		acciaio-steel	150-40	400-5800
VBD		bidirezionali -double acting	70-18	350-5100
VBD/VP		bidirezionali -double acting	70-18	350-5100
VUI		tenuta a cono - poppet type	160-42	400-5800

Catalogo di riferimento: D1WWEP01I - Ref. catalogue: D1WWEP01E

Valvole di blocco pilotate - Pilot operated check valves

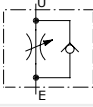
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VUPSL		single in linea 3 attacchi single acting 3 ports	150-40
VBPSL-VBPSL/T-VBPSL/SO		single in linea - single acting	100-26
VBPSF		single in linea flangiate single acting, face mounting	100-26
VBPSL/R		single con rubinetto single acting with shut-off valves	50-13
VBPSL/PS/..		single insensibili alla contropressione external pilot operated type	50-13
VBPDL-VBPD/L-T-VBPD/L/SO		doppie in linea-double acting	100-26
VBPDF		doppie flangiate double acting, face mounting	100-26
VB/M - VB/F		paracadute con colonnetta M-F o F-F hose burst valve with M-F or F-F housing	150-40

Catalogo di riferimento: D1WWEP01I - Ref. catalogue: D1WWEP01E

Valvole regolatrici di portata non compensate - Needle valves

Pressione massima/Max. pressure: 450 bar/6500 psi

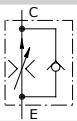
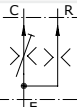
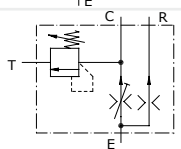
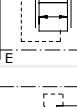
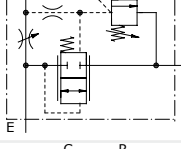
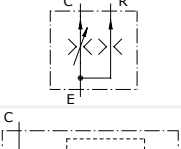
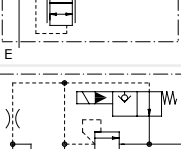
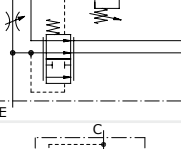
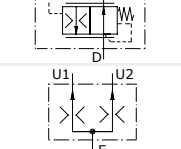
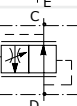
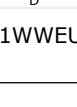
Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VSRU		ritenuta a sfera-ball type	150-40
VSRU/C		ritenuta a cono-poppet type	250-66
VSRB		bidirezionale-double acting	250-66

Catalogo di riferimento: D1WWET01I - Ref. catalogue: D1WWET01A

Valvole con corpo - Parts in body

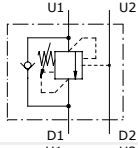
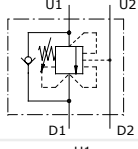
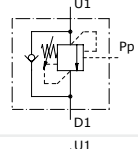
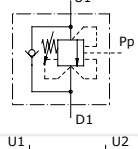
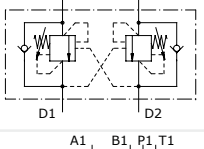
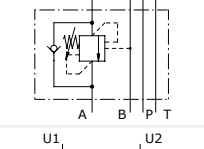
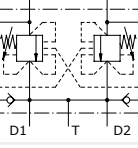
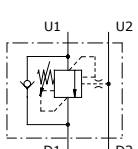
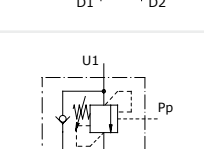
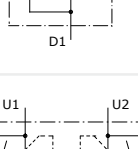
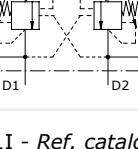
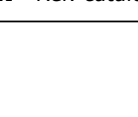
Valvole regolatrici di portata compensate - Flow control pressure compensated valves

Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VPR/2/RL VPR/2/U		a 2 vie compensate 2 ways, variable constant flow	150-40
VPF/3/EP		a 3 vie con eccedenza in pressione con portata in "c" fissa 3 ways, exceeding flow to pressure with constant flow in "c"	150-40
VPF/3/ EP...+VMP		a 3 vie con eccedenza in pressione con VMP 3 ways, exceeding flow to pressure with VMP	150-40
VPR/3/ET		a 3 vie-3 ways	350-92
VPR/3/ET/RL		a 3 vie con ritorno libero 3 ways with reverse free - flow check	350-92
VPR/3/ET/ VMP		a 3 vie con VMP 3 ways with VMP	150-40
VPR/3/ET/ RL/VMP		a 3 vie con ritorno libero 3 ways with reverse free - flow check	150-40
VPR/3/EP		a 3 vie con eccedenza in pressione 3 ways, exceeding flow to pressure	450-118
VPR/3/ET.../ VMP+VE		a 3 vie con venting 3 ways, electric venting	240-63
VPR/3/EP... VMP+VE		a 3 vie con eccedenza in pressione con venting 3 ways, exceeding flow to pressure electric venting	450-118
VPR/3/EP... VMP+VE/LPD		a 3 vie con eccedenza in pressione con venting 3 ways, exceeding flow to pressure electric venting	450-118
VDR/F-VDR/M		regolatrici di discesa colonnetta M-F o F-F for descent control M-F or F-F	150-40
VDFR		divisori di flusso flow divider - combiners	150-40
VDR/CO VDR/CO/M VDR/CO/F		taratura fissa fixed setting	13-3.4

Catalogo di riferimento: D1WWEU01I - Ref. catalogue: D1WWEU01E

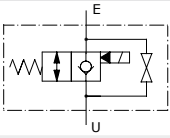
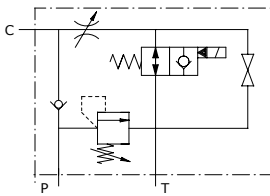
Valvole con corpo - *Parts in body*Valvole di controllo movimento - *Counterbalance (overcenter) valves*

Tipo <i>Type</i>	Schema idraulico <i>Hydraulic circuit</i>	Caratteristiche <i>Features</i>	Portata nominale <i>Nominal flow</i> (l/min-US gpm)	Press. massima <i>Max. pressure</i> (bar-psi)
VOSL... VOSL/SC...		singole in linea <i>single acting</i>	fino a 180 <i>up to 48</i>	350-5100
VOSL/CC... VOSL/SC/CC...		centro chiuso <i>closed center</i>	fino a 180 <i>up to 48</i>	350-5100
VOSLP... VOSLP/SC...		pilotaggio esterno <i>external pilot</i>	fino a 180 <i>up to 48</i>	350-5100
VOSLP/CC... VOSLP/SC/CC...		pilotaggio esterno <i>external pilot</i>	fino a 180 <i>up to 48</i>	350-5100
VODL... VODL/SC...		doppie in linea <i>double acting</i>	fino a 180 <i>up to 48</i>	350-5100
VODL/CC VODL/SC/CC		doppie in linea <i>double acting</i>	180-48	350-5100
VOSL/ML		modulari cetop 3-5 <i>sandwich mounting cetop 3-5</i>	70-18	350-5100
VODL/ML		modulari cetop 3-5 <i>sandwich mounting cetop 3-5</i>	70-18	350-5100
VABAL VABAL/SF		anticavitazione <i>anticavitation</i>	180-48	350-5100
NEW VOSL/N1116 VOSL/N1516		load sensitive	fino a 150 <i>up to 40</i>	400-5800
NEW VOSL/R1116		relief compensated	fino a 60 <i>up to 16</i>	400-5800
NEW VOSL/V1116 VOSL/V1516		vented	fino a 150 <i>up to 40</i>	400-5800
NEW VOSLP/N1116		load sensitive con pilotaggio esterno <i>load sensitive with external pilot</i>	fino a 150 <i>up to 40</i>	400-5800
NEW VOSLP/R1116		relief compensated con pilotaggio esterno <i>relief compensated with external pilot</i>	fino a 60 <i>up to 16</i>	400-5800
NEW VODL/N1116 VODL/N1516/CS		load sensitive	fino a 150 <i>up to 40</i>	400-5800
NEW VODL/R1116		relief compensated	fino a 60 <i>up to 16</i>	400-5800
NEW VODL/V1116/CS VODL/V1516/CS		vented	fino a 150 <i>up to 40</i>	400-5800

Valvole con corpo - Parts in body

Valvole direzionali a solenoide - Directional solenoid valves

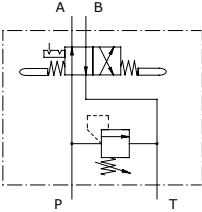
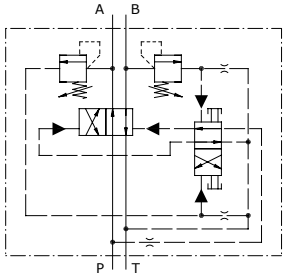
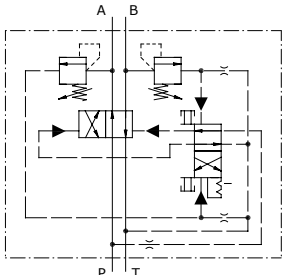
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
VE/B		con emergenza with emergency	160-42
VE/B/VMP/VUI/SR		per controllo cilindri a semplice effetto for single acting cylinder	150-40

Catalogo di riferimento: D1WWES01I - Ref. catalogue: D1WWES01E

Invertitori automatici - Automatic reversing valves

Pressione massima/Max. pressure: 210 bar/3050 psi

Tipo Type	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
SD4/IAM		meccanico in linea mechanical control	35-9.2
SD11/IAM		meccanico in linea mechanical control	65-17
VIA/AP/....		idraulico flangiato cetop 3 - 5 hydraulic face mounting cetop 3 - 5	60-16
VIA/AP CMEB		idraulico e meccanico in linea mechanical and hydraulic control in line	60-16

Catalogo di riferimento: D1WWEO01I - Ref. catalogue: D1WWEO01E

Cartucce cavità SAE - SAE cartridge valves

Valvole limitatrici di pressione - Pressure relief valves

Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Cavità SAE SAE cavity	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
NEW MC	8-10-12		azionamento diretto - <i>direct acting</i>	100-26
MG	10-12		azionamento differenziale - <i>differential</i>	100-26
MC..Y	8		proporzionale (NA) - <i>proportional (NO)</i>	1-0.3
NEW MC..T	10		proporzionale (NC) - <i>proportional (NC)</i>	3,5-0.92
NEW MC..X	10		proporzionale (NA) - <i>proportional (NO)</i>	3,5-0.92
MP	10-12-16		azionamento pilotato - <i>pilot operated</i>	180-48
MP..Y	16		azionamento pilotato (NA) - <i>pilot operated (NO)</i>	150-40
MP..T	10-12		azionamento pilotato (NC) - <i>pilot operated (NC)</i>	120-31.70
NEW MP..X	10-12		azionamento pilotato (NA) - <i>pilot operated (NO)</i>	50-13
PTD NEW MD..M	10-12		valvola diretta smorzata <i>direct valves, damped</i>	100-26

Catalogo di riferimento: D1WWEM01I - Ref. catalogue: D1WWEM01A

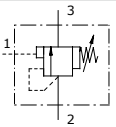
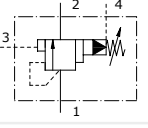
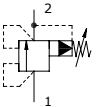
Valvole riduttrici di pressione - Pressure reducing valves

Tipo Type	Cavità SAE SAE cavity	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)
RB	8-10		diretta senza funzione di relieving <i>direct acting without relieving</i>	30-8	350-5100
RD	8-10		diretta con funzione di relieving <i>direct acting with relieving</i>	30-8	350-5100
RD..W	8		diretta con funzione di relieving (NA) <i>direct acting with relieving (NO)</i>	4-1	350-5100
NEW RD..T	8		diretta con funzione di relieving (NA) <i>direct acting with relieving (NO)</i>	4-1	210-3050
NEW RD..S	8		diretta con funzione di relieving (NA) <i>direct acting with relieving (NO)</i>	12-3	210-3050
RM..A	10-12-16		pilotata senza funzione di relieving <i>pilot operated without relieving</i>	150-40	350-5100
RP..A	10-12-16		pilotata con funzione di relieving <i>pilot operated with relieving</i>	150-40	350-5100
RM..W	10-12-16		pilotata senza funzione di relieving (NA) <i>pilot operated without relieving (NO)</i>	150-40	350-5100
RP..W	10-12-16		pilotata con funzione di relieving (NA) <i>pilot operated with relieving (NO)</i>	150-40	350-5100
RP..X	8		pilotata con funzione di relieving (NA) <i>pilot operated with relieving (NO)</i>	15-4	350-5100

Catalogo di riferimento: D1WWEN01I - Ref. catalogue: D1WWEN01A

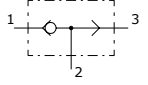
Cartucce cavità SAE - *SAE cartridge valves*

Valvole di sequenza - *Sequence valves*

Tipo <i>Type</i>	Cavità SAE <i>SAE cavity</i>	Schema idraulico <i>Hydraulic circuit</i>	Caratteristiche <i>Features</i>	Portata nominale <i>Nominal flow</i> (l/min-US gpm)	Pressione massima <i>Max. pressure</i> (bar-psi)
SE	8-10		pilotaggio esterno <i>external pilot</i>	20-5	210-3050
SG	12		pilotaggio esterno e drenaggio esterni <i>external pilot and drain</i>	50-13	300-4350
SW	10-12-16		messa a scarico <i>kick down</i>	180-48	350-5100
NEW SP..A	10			50-13	350-5100

Catalogo di riferimento: D1WWEO01I - *Ref. catalogue: D1WWEO01A*

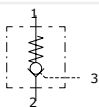
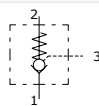
Valvole unidirezionali - *Check valves*

Tipo <i>Type</i>	Cavità SAE <i>SAE cavity</i>	Schema idraulico <i>Hydraulic circuit</i>	Caratteristiche <i>Features</i>	Portata nominale <i>Nominal flow</i> (l/min-US gpm)	Pressione massima <i>Max. pressure</i> (bar-psi)
UC	8-10-12-16		tenuta a cono <i>poppet type</i>	100-26	350-5100
UT	8-10		valvola di commutazione <i>shuttle valves</i>	20-5	350-5100

Catalogo di riferimento: D1WWEP01I - *Ref. catalogue: D1WWEP01E*

Valvole di blocco pilotate - *Pilot operated check valves*

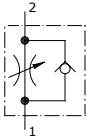
Pressione massima/*Max. pressure*: 350 bar/5100 psi

Tipo <i>Type</i>	Cavità SAE <i>SAE cavity</i>	Schema idraulico <i>Hydraulic circuit</i>	Rapporti di pilotaggio disponibili <i>Available pilot ratio</i>	Portata nominale <i>Nominal flow</i> (l/min-US gpm)
BC..A	8-10-12-16		1:3-1:4	100-26
NEW BC..C	10			60-16
NEW BC..B	10		pilotata in chiusura <i>pilot to close</i>	100-26

Catalogo di riferimento: D1WWEP01I - *Ref. catalogue: D1WWEP01A*

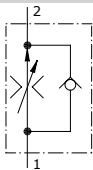
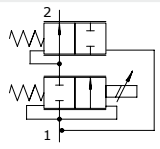
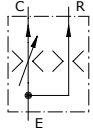
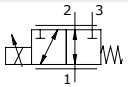
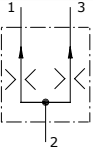
Cartucce cavità SAE - SAE cartridge valves
Valvole regolatrici di portata non compensate - Needle valves

Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Cavità SAE SAE cavity	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
NB	8-10-12-16		disponibili versioni sensibilizzate <i>available with different metering spool</i>	60-16
NU	8-10-12-16		disponibili versioni sensibilizzate <i>available with different metering spool</i>	100-26
NT	8-10-12-16		disponibili versioni sensibilizzate <i>available with different metering spool</i>	60-16

Catalogo di riferimento: D1WWET01I - Ref. catalogue: D1WWET01A

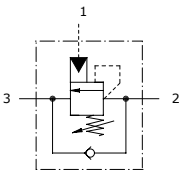
Valvole regolatrici di portata compensate - Flow control pressure compensated valves

Tipo Type	Cavità SAE SAE cavity	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)
PW-PU	8-10-12-16		disponibili versioni sensibilizzate <i>available with different metering spool</i>	90-24	350-5100
PU..X	8-10-12-16		a 2 vie 2 ways	90-24	315-4600
PP	8-10-12-16		disponibili versioni sensibilizzate <i>available with different metering spool</i>	90-24	350-5100
NEW PP..X	8-10-12-16		con eccedenza in pressione <i>exceeding flow to pressure</i>	100-26	315-4600
PD	10-12-16		divisore di flusso <i>flow divider</i>	150-40	210-3050

Catalogo di riferimento: D1WWEU01I - Ref. catalogue: D1WWEU01E

Valvole di controllo movimento - Counterbalance (overcenter) valves

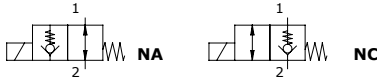
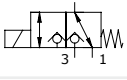
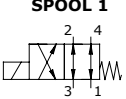
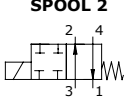
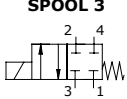
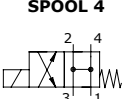
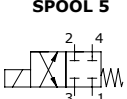
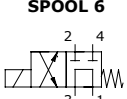
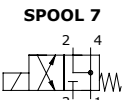
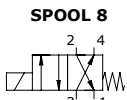
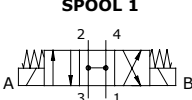
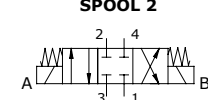
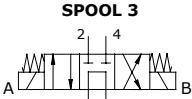
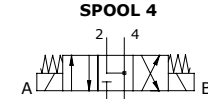
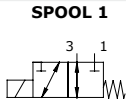
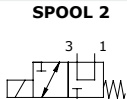
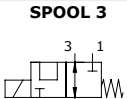
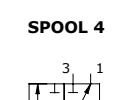
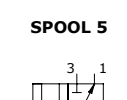
Pressione massima/Max. pressure: 350 bar/5100 psi

Tipo Type	Cavità SAE SAE cavity	Schema idraulico Hydraulic circuit	Caratteristiche Features	Portata nominale Nominal flow (l/min-US gpm)
CA	10-12-16			60-16
CC	10-12-16-20		insensibile alle contropressioni <i>not affected by back-pressure</i>	180-48

Catalogo di riferimento: D1WWER01I - Ref. catalogue: D1WWER01A

Cartucce cavità SAE - SAE cartridge valves

Valvole direzionali a solenoide - Directional solenoid valves

Tipo Type	Cavità SAE SAE cavity	Schema idraulico Hydraulic circuit	Portata nominale Nominal flow (l/min-US gpm)	Pressione massima Max. pressure (bar-psi)
EE	8-10-12		40-11	210-3050
EA	8		1-0.3	350-5100
NEW EC	8-10-12-16		180-47	350-5100
NEW EF..M	8-10-12-16		180-47	380-5500
NEW EW	8-10-12		50-13	210-3050
EL	8-10		20-5.3	210-3050
NEW ER../M	8-10	SPOOL 1  SPOOL 2  SPOOL 3  SPOOL 4  SPOOL 5  SPOOL 6  SPOOL 7  SPOOL 8 	40-11	210-3050
NEW ET../M	8-10	SPOOL 1  SPOOL 2  SPOOL 3  SPOOL 4 	40-11	210-3050
NEW EJ../M	8-10	SPOOL 1  SPOOL 2  SPOOL 3  SPOOL 4  SPOOL 5 	40-11	210-3050

Bobine - note generali: sono disponibili bobine con differenti tipologie di connettori elettrici: contattare il Servizio Commerciale o vedere il catalogo di riferimento: D1WWES01I

Coils - general notes: coils are available with different types of solenoids: please contact our Sales Department or consult the reference catalogue: D1WWES01E

Blocchi integrati (HICs) - Hydraulic integrated circuit



L'utilizzo dei circuiti idraulici integrati chiamati HICs (hydraulic integrated circuit) offre sostanziali vantaggi sia nel settore mobile che industriale.

Per questo Walvoil studia e realizza blocchi/manifold speciali per le diverse applicazioni e in base alle necessità del cliente. In particolare questi manifold speciali possono richiedere flangiature di valvole direzionali e filtri oltre che essere loro stessi flangiabili a pompe, motori e trasmissioni.

The usage of integrated hydraulic circuits HIC (hydraulic integrated circuit) offers important advantages both in the mobile and in the industrial sector.

Walvoil therefore studies and realizes special manifolds for the different applications and as per the customer needs.

These customized manifolds can need flanges of directional valves and filters, besides being face mounting to pumps, motors and transmissions.



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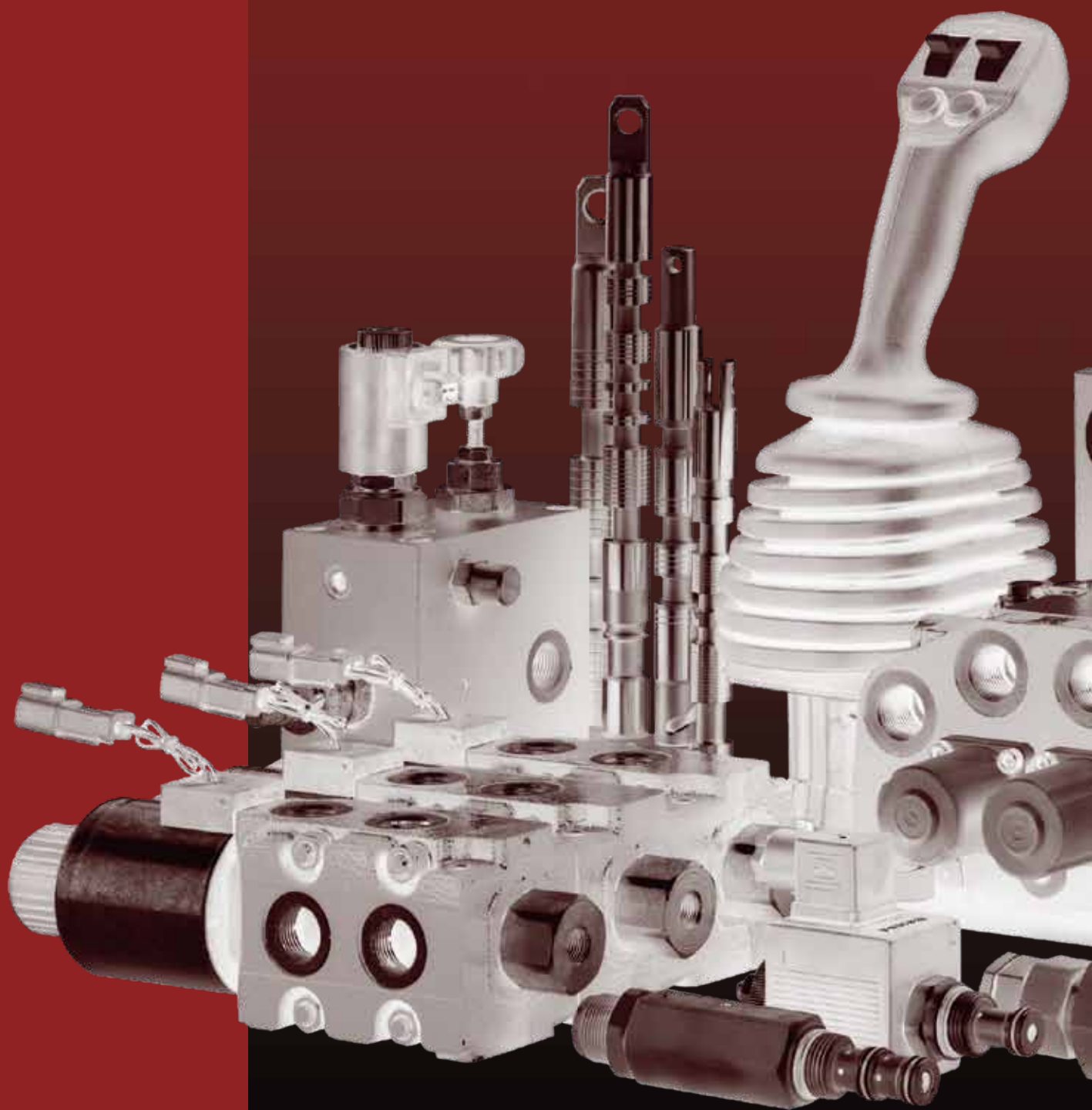
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