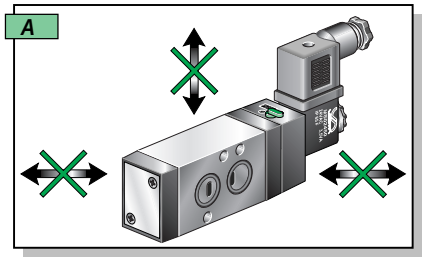
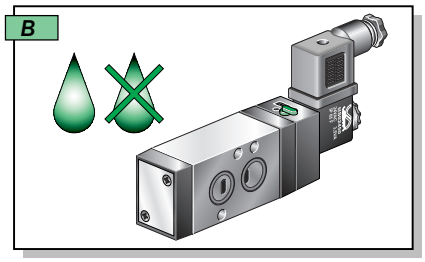
BUILDING FEATURES / *CARATTERISTICHE COSTRUTTIVE*

VESTA "**NAMUR**" valves are available in the 3/2 and 5/2 versions, with different forms of actuation (i.e. solenoid / pilot etc). This series of valves present a high nominal air flow and no environmental contact between the namur valve and the actuator being switched (See Fig. **A**). These namur valves have a high working frequency and can be used with lubricated or non-lubricated air (See Fig. **B**), thanks to a spool made of a light alloy aluminium, nickel treated by "Niploy Process" (See Fig. **C**) to give the surface a smooth finish. The self lubricating lip rubber seals which the spool runs in, assures the valves of a long lasting durable life span.

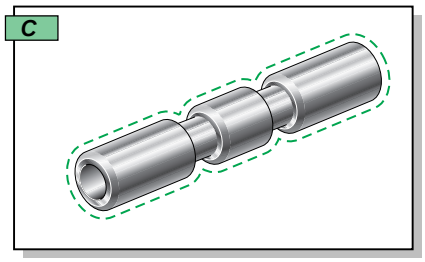
*Le valvole ed elettrovalvole VESTA della serie **NAMUR** funzionano secondo il principio del distributore a cassetto bilanciato (vedi fig. **1** e **2**). La serie, realizzata nelle funzioni 3/2 e 5/2, viene fornita con più sistemi di azionamento e riposizionamento.*
*Le caratteristiche fondamentali sono: grande portata d'aria, ermeticità di funzionamento verso l' ambiente di lavoro nei modelli bistabili e in quelli con ritorno a molla pneumatica (**A**), alta velocità di scambio, possibilità di funzionamento continuo privo di lubrificazione (**B**) ottenuto con l'impiego di materiali particolari come, ad esempio, la spola realizzata in lega leggera con trattamento Niploy Process che le conferisce notevole durezza superficiale e caratteristiche autolubrificanti (**C**), e le guarnizioni in elastomero nitrilico con profilo a labbro antiusura.*



Sealed against working evnironment.
Ermeticità verso l' ambiente di lavoro.

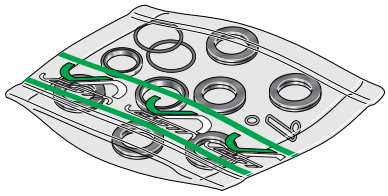


Possibility of operating continuosly without lubrication.
Possibilità di funzionamento continuo privo di lubrificazione.



Light alloy spool with Niploy Process treated surface.
Spola in lega leggera con trattamento speciale Niploy Process.

SET . 1/4 SG *SEALS KIT* / KIT GUARNIZIONI DI RICAMBIO



Seals kit code - *Codice del kit*

SET 1 1/4 SG:
for NAMUR **mono-stable** valves - *per valvole **monostabili** NAMUR.*

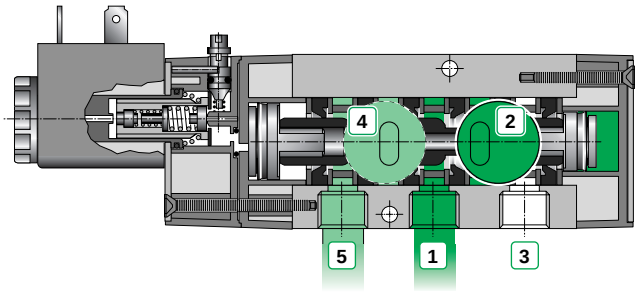
SET 2 1/4 SG:
for NAMUR **bi-stable** valves - *per valvole **bistabili** NAMUR.*

Example / *Esempio:* **NM32W1S-SR -02400 ---> SET 1 1/4 SG** **NM32W2S-TP -02400 ---> SET 2 1/4 SG**

WORKING PRINCIPLE / *PRINCIPIO DI FUNZIONAMENTO*

In the example here below, when the valve **NM52W1S-PR-02450** (see the draw) stands in the normal position, ports **4 - 5** and **1 - 2** are connected and the position is kept thanks to the pressure assured to the smallest piston (right side of the valve).
When the valve is actuated, the same pressure is fed to the biggest piston. It's bigger surface create a force which allows to the spool to move and therefore to connect ports **4 - 1** and **2 - 3**. In the mechanical spring version, the valve is kept in the normal position by a mechanical spring. In the bistable versions, the position of the valve remains in its last switched state.

Il principio di funzionamento dei distributori 3/2 e 5/2 (nell'esempio l'elettrovalvola **NM52W1S-PR-02450** *con comando elettropneumatico e riposizionamento a molla pneumatica) consiste nel mantenere costantemente in pressione il pistone di riposizionamento (fig.* ***1****), utilizzando la fonte d'aria compressa presente nel condotto di alimentazione* ***1****, collegando le vie* ***1- 2*** *e* ***4 - 5****.*
L' eccitazione del solenoide mette in comunicazione il condotto ***1*** *con la camera dove é alloggiato il pistone di comando. Quest'ultimo, avendo un'area di spinta maggiore del pistone di riposizionamento, sposta la spola in modo tale da collegare i canali* ***1- 4*** *e* ***2- 3*** *(fig.* ***2****).*
Diseccitando il solenoide si ripristina la posizione iniziale. Nel sistema dotato di riposizionamento con molla meccanica il funzionamento é analogo, mentre nei sistemi bistabili (doppio comando elettropneumatico o doppio comando pneumatico) in assenza di segnale rimangono i collegamenti formatisi nell'ultimo azionamento.



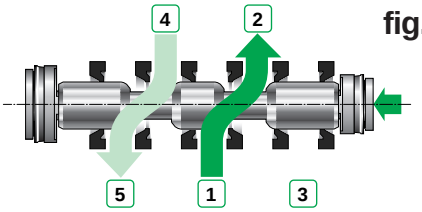
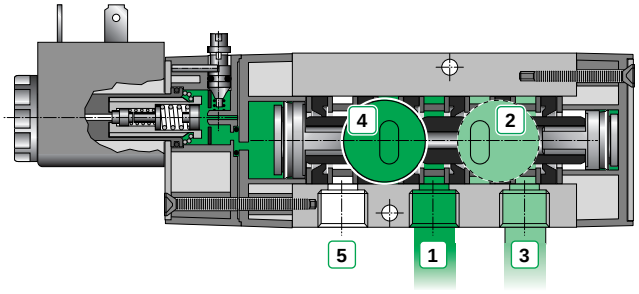


fig. 1

NORMAL POSITION / *POSIZIONE A RIPOSO*



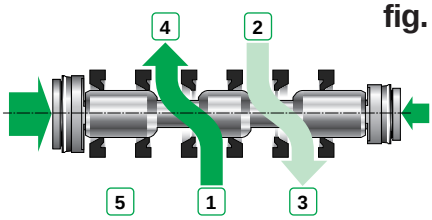
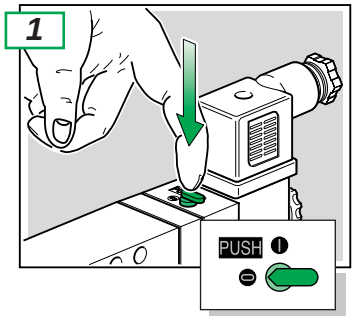


fig. 2

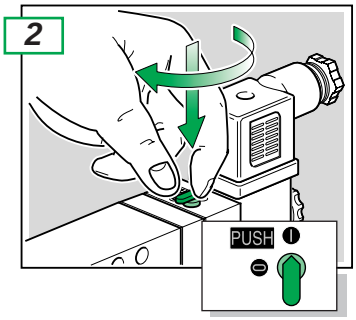
ACTUATED POSITION / *POSIZIONE DI LAVORO*

MANUAL OVERRIDING / *AZIONAMENTO COMANDO MANUALE*



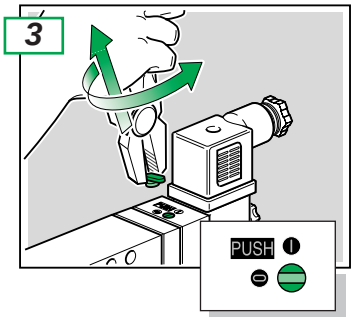
Push to actuated valve without locking. ***Relise the button to get back to normal position.***

Per azionare la valvola, durante la fase di collaudo con pressione in linea senza collegamento elettrico, premere la leva del comando manuale. ***Rilasciare per ripristinare la condizione di riposo.***



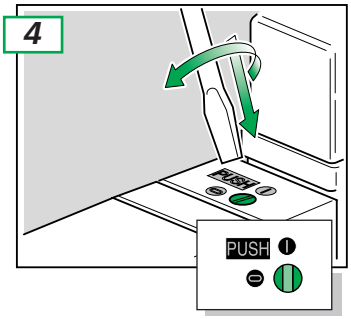
To active the valve permanently push the M/O (manual override) and rotate clockwise 90°.
To return to normal position, push the M/O again and turn 90° anti-clockwise.

Per azionare la valvola in modo permanente premere la leva del comando manuale e ruotare in senso orario sino alla posizione 1. ***Ruotare in senso antiorario per ripristinare la condizione di riposo.***



Should the M/O no longer be required, then turn the M/O anticlockwise until it breaks off.

Terminato il collaudo ruotare in senso antiorario la leva sino alla rottura.



Should the M/O be required after breaking off, then a screwdriver may be used.

Per interventi successivi sul comando manuale usare un adeguato cacciavite ed operare come al punto ***1*** *o* ***2****.*

SERIE NM — TECHNICAL FEATURES / *CARATTERISTICHE TECNICHE*

C0MMON TECHNICAL FEATURES NM

Fixing	N° 2 Holes Ø 5,3	Medium	Filtered air
Port connections	G 1/4	Reference temperature	+20 °C
Flow section	Ø 8 mm	Reference pressure	6 bar
Environment temperature range	-10 °C / +50 °C	Nominal air flow	1080 Nl/min
Temperature range of medium	0 °C / +40 °C	Fluid conductance "C"	4,34 Nl/s bar
Lubrication	Not required	Critical pressure ratio "b"	0,212

PNEUMATIC VALVES FEATURES NM

NM32V1P - SR
NM52V1P - SR
Nominal max frequence ..... 10 Hz
Operating pressure range ..... **2,5 ÷ 10 bar**

NM32V1P - PR
NM52V1P - PR
Nominal max frequence ..... 20 Hz
Operating pressure range ..... **2,5 ÷ 10 bar**

NM32V2P - TP
NM52V2P - TP
Nominal max frequence ..... 30 Hz
Operating pressure range ..... **1,5 ÷ 10 bar**

SOLENOID VALVES FEATURES NM

		AC	DC
NM32W1S - SR **NM52W1S - SR**	Nominal. max frequence	11 Hz	11 Hz
	Response time - swich ON	19 ms	21 ms
	Response time - swich OFF	35 ms	46 ms
	Operating pressure range	**2,5 ÷ 10 bar**	
NM32W2S - TP **NM52W2S - TP**	Nominal. max frequence	27 Hz	21 Hz
	Response time - swich ON	11 ms	14 ms
	Response time - swich OFF	11 ms	14 ms
	Operating pressure range	**1,5 ÷ 10 bar**	

		AC	DC
NM32W1S - PR **NM52W1S - PR**	Nominal. max frequence	16 Hz	13 Hz
	Response time - swich ON	18 ms	21 ms
	Response time - swich OFF	33 ms	44 ms
	Operating pressure range	**2,5 ÷ 10 bar**	

For electrical features solenoid pilot NAMUR serie pp. B-29 ÷ B-31.

CARATTERISTICHE TECNICHE COMUNI NM

Fissaggio	*N° 2 fori Ø 5,3*	*Fluido*	*Aria filtrata*
Connessioni	*G 1/4*	*Temperatura nominale*	*+20 °C*
Diametro nominale	*Ø 8 mm*	*Pressione nominale*	*6 bar*
Temperatura ambiente	*-10 °C / +50 °C*	*Portata nominale*	*1080 Nl/min*
Temperatura fluido	*0 °C / +40 °C*	*Valore conduttanza "C"*	*4,34 Nl/s bar*
Lubrificazione	*Non necessaria*	*Rapporto critico delle pressioni "b"*	*0,212*

CARATTERISTICHE VALVOLE PNEUMATICHE NM

NM32V1P - SR
NM52V1P - SR
Frequenza max nominale ..... *10 Hz*
Pressione di esercizio ..... ***2,5 ÷ 10 bar***

NM32V1P - PR
NM52V1P - PR
Frequenza max nominale ..... *20 Hz*
Pressione di esercizio ..... ***2,5 ÷ 10 bar***

NM32V2P - TP
NM52V2P - TP
Frequenza max nominale ..... *30 Hz*
Pressione di esercizio ..... ***1,5 ÷ 10 bar***

CARATTERISTICHE ELETTROVALVOLE NM

		AC	DC
NM32W1S - SR **NM52W1S - SR**	*Frequenza max nominale*	*11 Hz*	*11 Hz*
	Tempo medio di risposta in eccitazione	*19 ms*	*21 ms*
	Tempo medio di risposta in diseccitazione	*35 ms*	*46 ms*
	Pressione di esercizio	***2,5 ÷ 10 bar***	
NM32W2S - TP **NM52W2S - TP**	*Frequenza max nominale*	*27 Hz*	*21 Hz*
	Tempo medio di risposta in eccitazione	*11 ms*	*14 ms*
	Tempo medio di risposta in diseccitazione	*11 ms*	*14 ms*
	Pressione di esercizio	***1,5 ÷ 10 bar***	

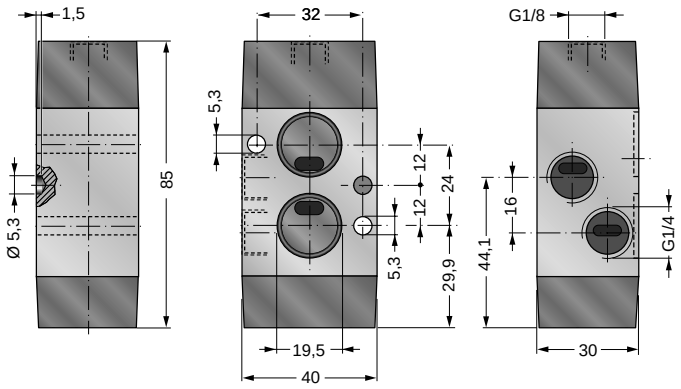
		AC	DC
NM32W1S - PR **NM52W1S - PR**	*Frequenza max nominale*	*16 Hz*	*13 Hz*
	Tempo medio di risposta in eccitazione	*18 ms*	*21 ms*
	Tempo medio di risposta in diseccitazione	*33 ms*	*44 ms*
	Pressione di esercizio	***2,5 ÷ 10 bar***	

***Caratteristiche elettriche bobina per elettrovalvole serie* NAMUR *vedi pp.* B-29 ÷ B-31.**

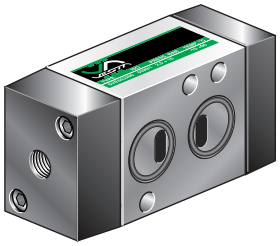
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - SPRING RETURN

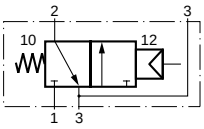
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA



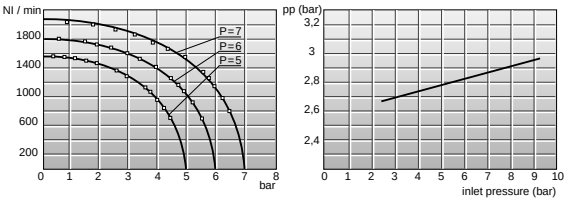
NM32V1P - SR



SIMBOL- *SIMBOLO*



DIAGRAMS - *DIAGRAMMI*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

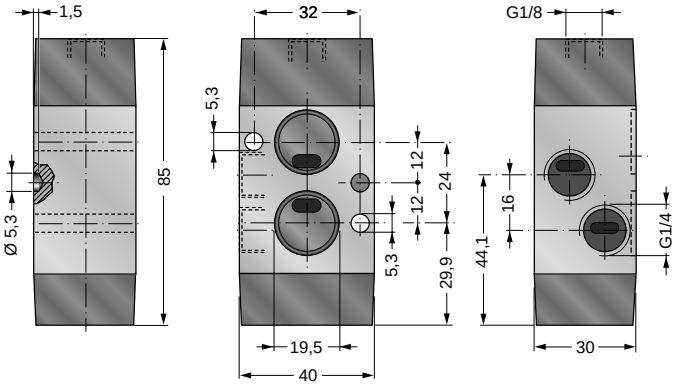
PILOT PRESSURE / INLET PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

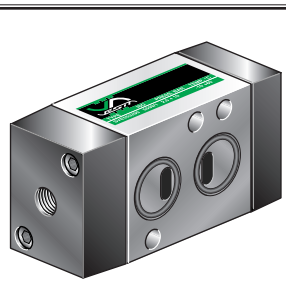
VALVE / *VALVOLA* 3/2

SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN

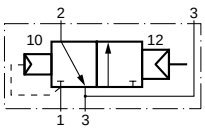
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA



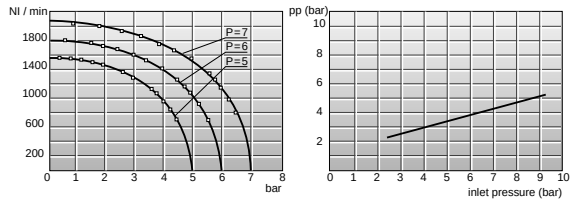
NM32V1P - PR



SIMBOL- *SIMBOLO*



DIAGRAMS - *DIAGRAMMI*



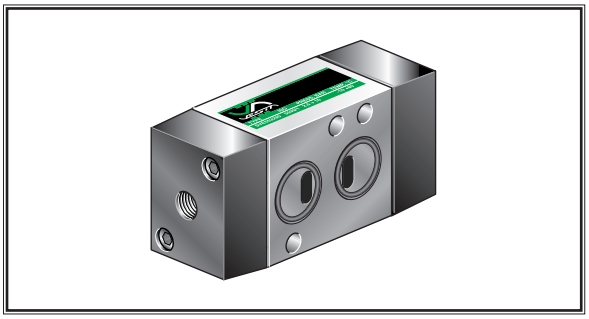
AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

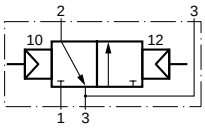
PILOT PRESSURE / INLET PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

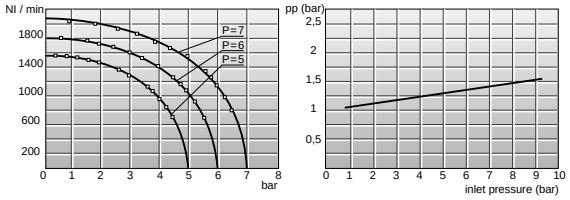
NM32V2P - TP



SIMBOL- *SIMBOLO*



DIAGRAMS - *DIAGRAMMI*

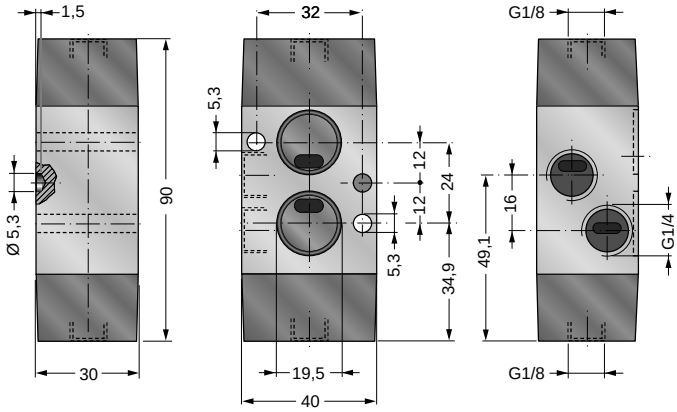


AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

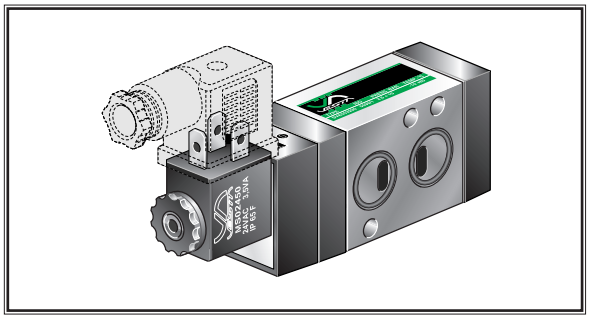
PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

VALVE / *VALVOLA* 3/2

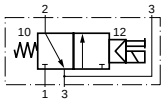
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



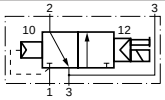
NM32W1S - . R - .....



SIMBOLS- *SIMBOLI*

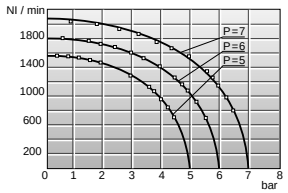


NM32W1S-SR-.....



NM32W1S-PR-.....

DIAGRAM - *DIAGRAMMA*



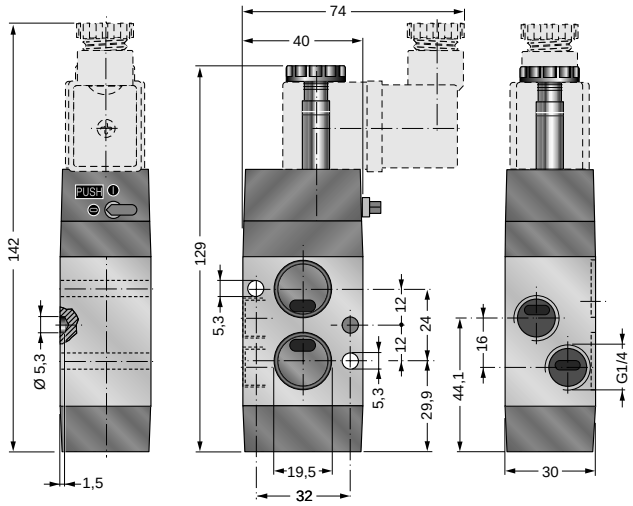
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE

CODES - *CODICI*

Ordination code *Codice ordinazione*		Voltage *Tensione*
NM32W1S - . R - 00000	.....	No coil / *Senza solenoide*
NM32W1S - . R - 01200	.....	12 V DC
NM32W1S - . R - 02400	.....	24 V DC
NM32W1S - . R - 02450	.....	24 V 50/60Hz AC
NM32W1S - . R - 11050	.....	110 V 50/60Hz AC
NM32W1S - . R - 22050	.....	220 V 50/60Hz AC

VALVE / *VALVOLA* 3/2

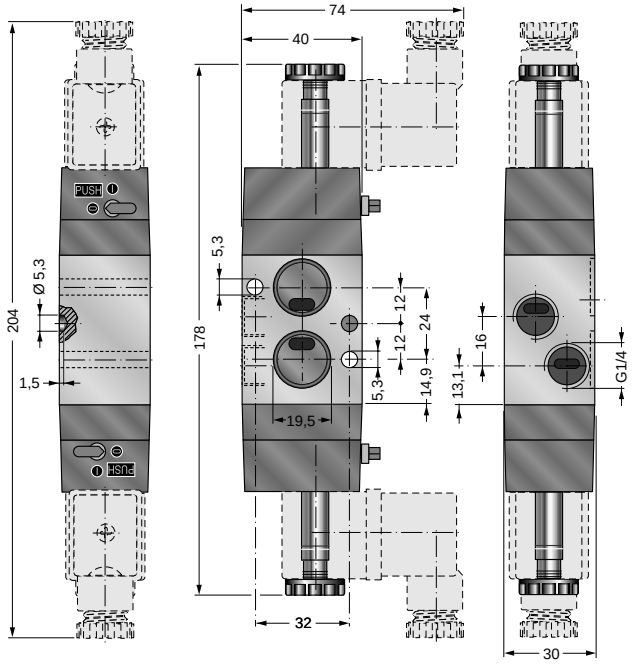
SOLENOID VALVE
COMANDO ELETTROPNEUMATICO



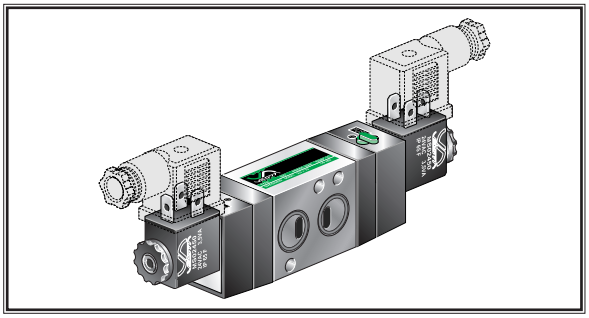
VALVE / *VALVOLA* 3/2

DOUBLE SOLENOID VALVE

DOPPIO COMANDO ELETTROPNEUMATICO



NM32W2S - TP - .....



SIMBOL- *SIMBOLO*

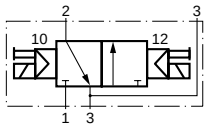
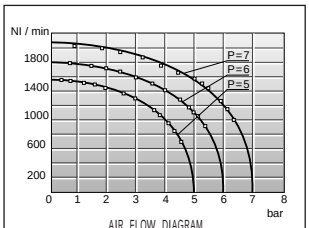


DIAGRAM - *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

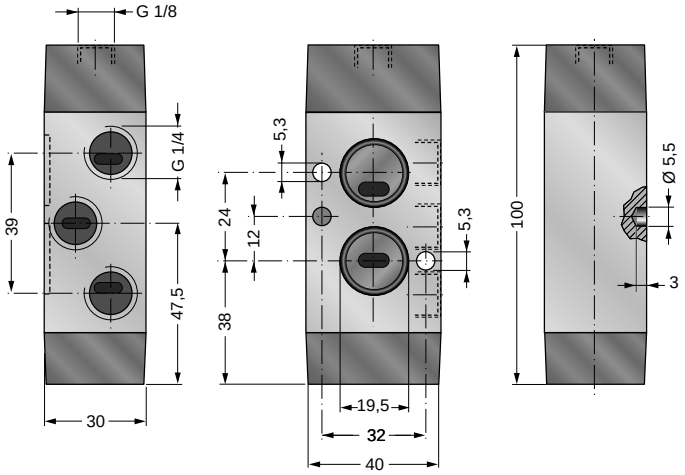
CODES - *CODICI*

Ordination code *Codice ordinazione*		Voltage *Tensione*
NM32W2S - TP - 00000	.....	No coils / *Senza solenoidi*
NM32W2S - TP - 01200	.....	12 V DC
NM32W2S - TP - 02400	.....	24 V DC
NM32W2S - TP - 02450	.....	24 V 50/60Hz AC
NM32W2S - TP - 11050	.....	110 V 50/60Hz AC
NM32W2S - TP - 22050	.....	220 V 50/60Hz AC

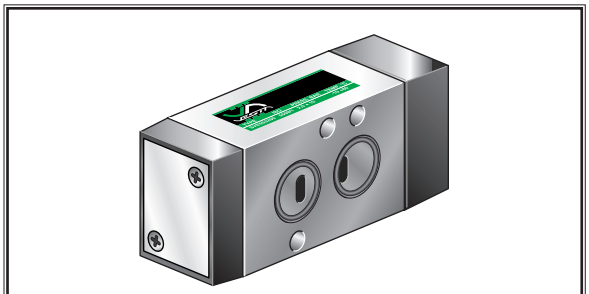
VALVE / *VALVOLA* 5/2

SINGLE PNEUMATIC PILOT - SPRING RETURN

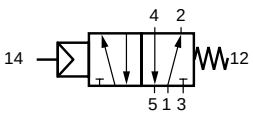
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA



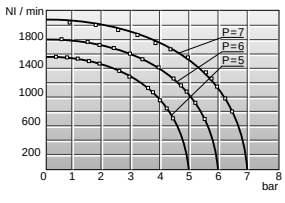
NM52V1P - SR



SIMBOL- *SIMBOLO*

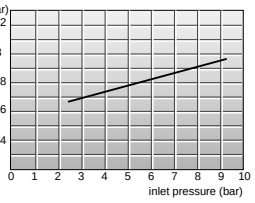


DIAGRAMS - *DIAGRAMMI*



AIR FLOW DIAGRAM

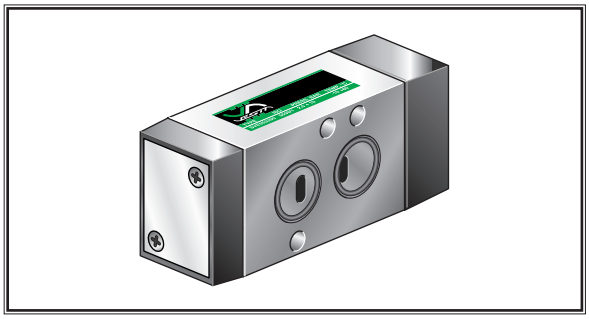
DIAGRAMMA DELLE PORTATE



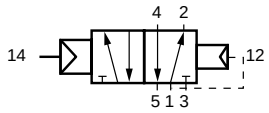
PILOT PRESSURE / INLET PRESSURE

DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

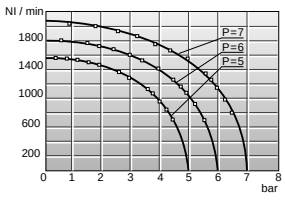
NM52V1P - PR



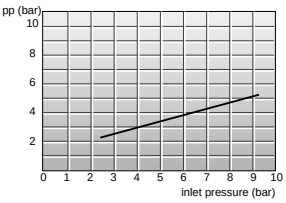
SIMBOL- *SIMBOLO*



DIAGRAMS - *DIAGRAMMI*



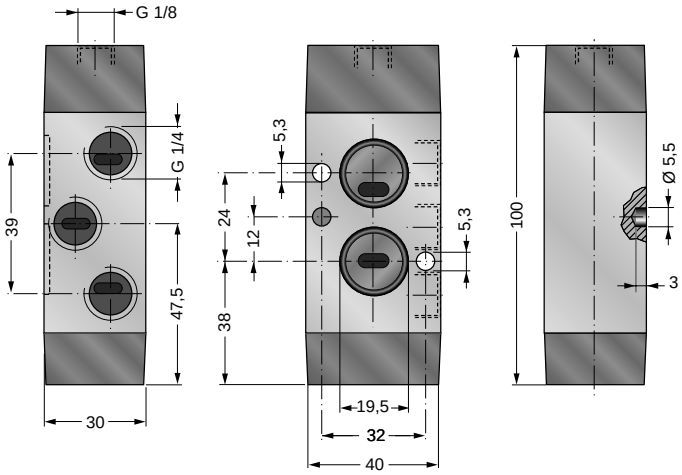
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE



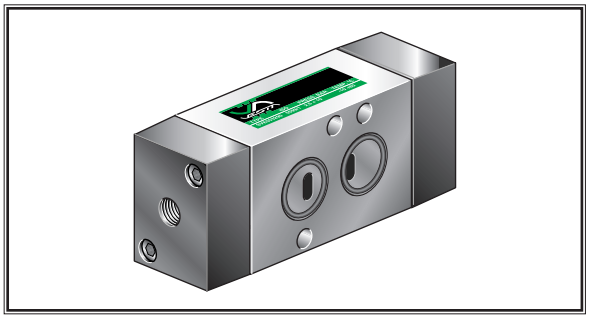
PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

VALVE / *VALVOLA* 5/2

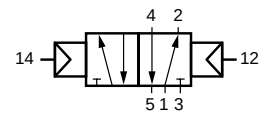
SINGLE PNEUMATIC PILOT - INTERNAL PRESSURE RETURN
COMANDO PNEUMATICO - RIPOSIZIONAMENTO A MOLLA PNEUMATICA



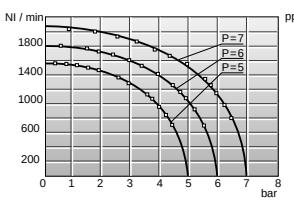
NM52V2P - TP



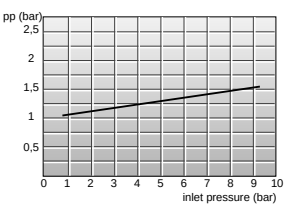
SIMBOL- *SIMBOLO*



DIAGRAMS - *DIAGRAMMI*



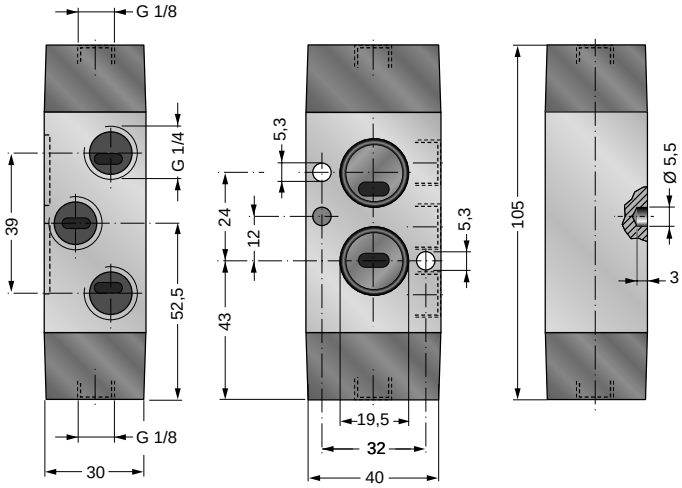
AIR FLOW DIAGRAM
DIAGRAMMA DELLE PORTATE



PILOT PRESSURE / INLET PRESSURE
DIAGRAMMA DELLA PRESSIONE DI PILOTAGGIO IN RELAZIONE ALLA PRESSIONE DI ALIMENTAZIONE

VALVE / *VALVOLA* 5/2

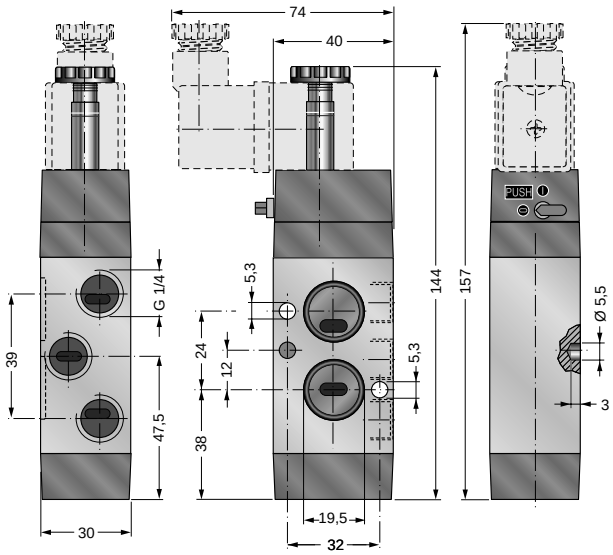
DOUBLE PNEUMATIC PILOT
DOPPIO COMANDO PNEUMATICO



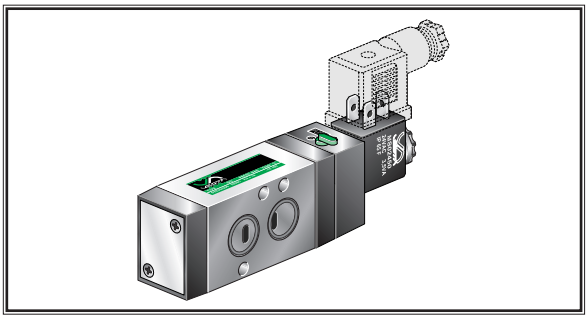
VALVE / *VALVOLA* 5/2

SOLENOID VALVE - SPRING RETURN

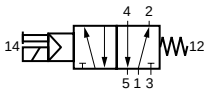
COMANDO ELETTROPNEUMATICO - RIPOSIZIONAMENTO A MOLLA MECCANICA



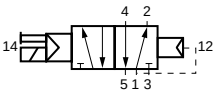
NM52W1S - . R - .....



SIMBOLS- *SIMBOLI*

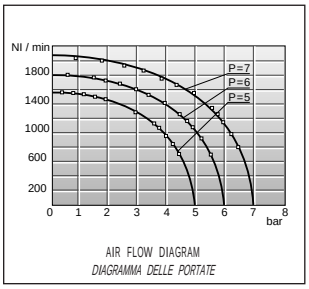


NM52W1S-SR-.....



NM52W1S-PR-.....

DIAGRAM - *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

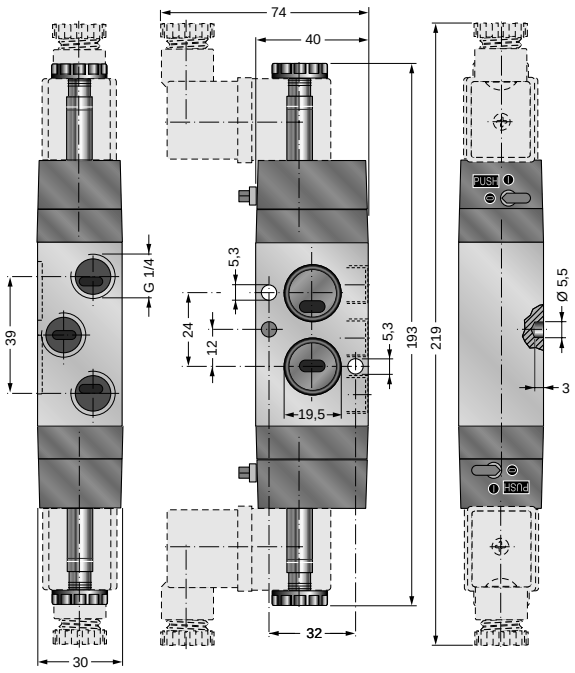
CODES - *CODICI*

Ordination code *Codice ordinazione*		Voltage *Tensione*
NM52W1S - . R - 00000	.....	No coil / *Senza solenoide*
NM52W1S - . R - 01200	.....	12 V DC
NM52W1S - . R - 02400	.....	24 V DC
NM52W1S - . R - 02450	.....	24 V 50/60Hz AC
NM52W1S - . R - 11050	.....	110 V 50/60Hz AC
NM52W1S - . R - 22050	.....	220 V 50/60Hz AC

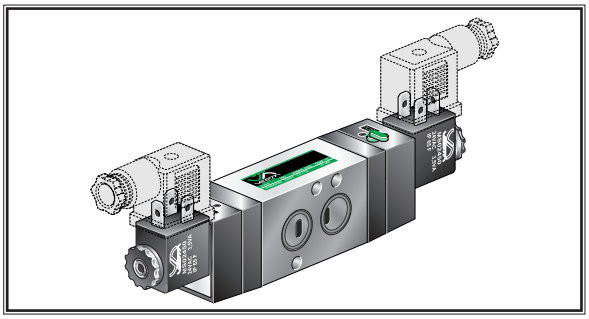
VALVE / *VALVOLA* 5/2

DOUBLE SOLENOID VALVE

DOPPIO COMANDO ELETTROPNEUMATICO



NM52W2S TP - .....



SIMBOL- *SIMBOLO*

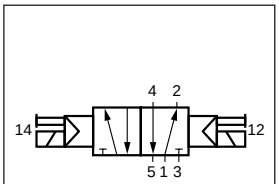
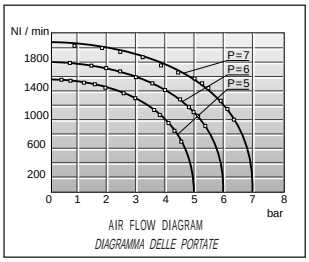


DIAGRAM - *DIAGRAMMA*



AIR FLOW DIAGRAM

DIAGRAMMA DELLE PORTATE

CODES - *CODICI*

Ordination code *Codice ordinazione*		Voltage *Tensione*
NM52W2S - TP - 00000	.....	No coils / *Senza solenoidi*
NM52W2S - TP - 01200	.....	12 V DC
NM52W2S - TP - 02400	.....	24 V DC
NM52W2S - TP - 02450	.....	24 V 50/60Hz AC
NM52W2S - TP - 11050	.....	110 V 50/60Hz AC
NM52W2S - TP - 22050	.....	220 V 50/60Hz AC