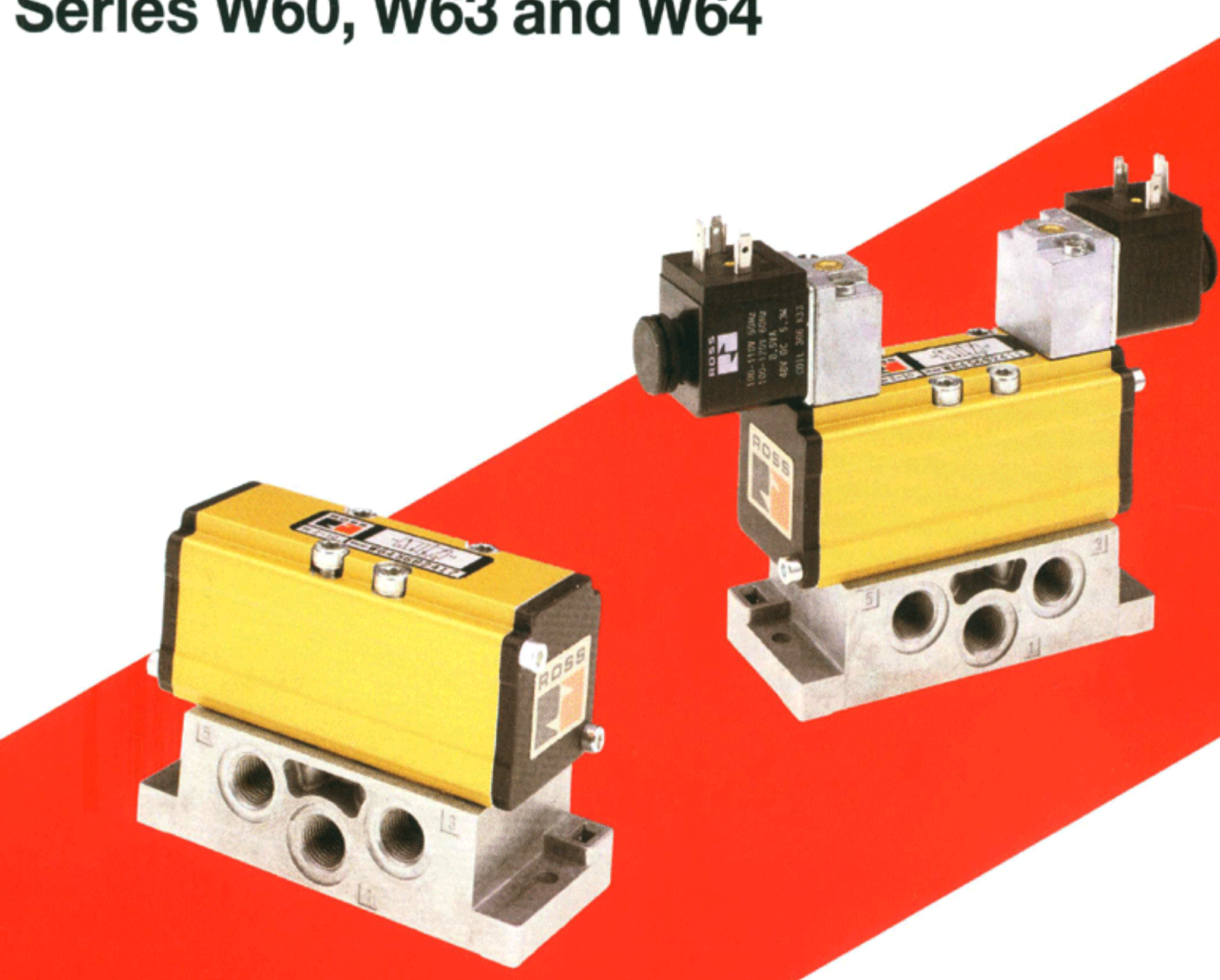
Bulletin E 391 C

ISO Valves for Base Mounting

Series W60, W63 and W64



ROSS AIR CONTROL PRODUCTS

ROSS®

GENERAL INFORMATION

The majority of items in this catalogue are currently being supplied. However, a few items will not become available until later and an earlier model will be offered. To ensure that your records show the latest products available please keep in touch with your Ross distributor.

STANDARD SPECIFICATIONS
For each product, specifications include the flow media, lubrication requirements, ambient and media temperature ranges, pressure ranges, and electrical data where applicable.

SOLENOIDS
All Ross standard solenoids are rated for continuous duty and will operate the valve within the air pressure range specified in this catalogue.

Recommended Solenoid Voltages
100, 110 volts, 50 Hz
100, 120 volts, 60 Hz
24, 110 volts d. c.

In addition, the following voltages are available:

ROSS CONTROLS®
200, 220 volts, 50 Hz
200, 240, 480 volts, 60 Hz

ROSS EUROPA, ROSS U K
24, 48, 220 volts, 50 Hz
240 volts, 60 Hz

ROSS ASIA
200, 220 volts, 50 Hz
200, 240 volts, 60 Hz

Consult ROSS for other voltages.

PORT IDENTIFICATION
Valve symbols in this catalogue conform to the 1976 ISO 1219 standard of the International Organization for Standardization. Port markings on the symbols conform to ISO/TC 131, CETOP Provisional Recommendation RP68, amendment 1975.05.05.

OTHER APPLICATIONS
The products in this catalogue are intended for use in industrial pneumatic systems. Most products are adaptable to other uses and conditionally suitable for operating conditions not covered by our standard specifications. Contact Ross for further information.

FORMULA FOR CALCULATING FLOW RATING
to select the appropriate components for your air system.

$p_2 > \frac{p_1}{2}, \Delta p < \frac{p_1}{2}; Q_N = 26.4 \times k_v \sqrt{\Delta p \times p_2}$ (subcritical speed @ 20° C)

$p_2 < \frac{p_1}{2}, \Delta p > \frac{p_1}{2}; Q_N = 13.2 \times k_v \times p_1$ (overcritical speed @ 20° C)

Q_N = volume flow (m³/h); p_1 = upstream pressure (bar, absolute);
p_2 = downstream pressure (bar, absolute); $\Delta p = p_1 - p_2$

CAUTIONS

1. Electrical and fluid power to the valve must be disconnected before servicing a valve.

2. Ross products are generally used in applications where compressed air is present. Compressed air and other fluids under pressure must be treated with proper caution.

3. To prevent possible personnel or equipment damage with any fluid power installation, all instructions applicable should be read and complied with before using the system.

4. Ross products should be installed by properly trained personnel. Since any circuit or installation or system can be tampered with or need servicing after installation, individuals responsible for the safety of people and care of equipment must check every installation on a regular basis and perform maintenance as necessary.

5. Use a filter in all installations. Dirt, scale, moisture, etc. are present in virtually any air system and must be removed with a filter to assure continuous clean air supply so that contaminants do not interfere with the proper functioning of the valve.

6. Filters and lubricators with polycarbonate plastic bowls are specifically designed for compressed air service. Use with or injection of certain hazardous fluids or gases in the system (e.g., alcohol or liquidified petroleum gases) could be harmful to the unit or result in a combustible or hazardous leakage.

7. Do not restrict the air flow in the supply line as this will lower the pressure during flow. Reducing the pressure to less than the minimum recommended pressure could cause erratic valve action. Also sudden flow can cause pressure to drop below gauge reading.

8. Restricting the exhaust port of valves can adversely affect their proper operation. Silencers must be resistant to clogging and have the flow capacity to match the exhaust capacity of the valves. Possible contamination of the silencer matrix may result in a change in flow and increased back pressure.
   Ross expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size or inadequately maintained silencer installed with a Ross product.

9. Each product should be used within its specification limits. Failure to do so can affect the product performance.

INDEX ISO VALVES

SOLENOID PILOT CONTROL

ISO Size	Spool Valves		Page	Poppet Valves (Std-Temp)		Page	Poppet Valves (Hi-Temp)		Page
	Manual Override non-locking	Manual Override locking		Manual Override non-locking	Manual Override locking		Manual Override non-locking	Manual Override locking	
5/2 - Single Solenoid Control									
1	W6076B2401 W6376S2401	W6076B2411 W6376S2411	6 10	W6476B2401	W6476B2411	14	W6476B2402	W6476B2412	14
2	W6076B3401 W6376S3401	W6076B3411 W6376S3411	6 10	W6476B3401	W6476B3411	14	W6476B3402	W6476B3412	14
3	W6376B4401 W6376S4401	W6076B4411 W6376S4411	6 10	W6476B4401	W6476B4411	14	W6476B4402	W6476B4412	14
4	W6076B5401	W6076B5411	6	–	–		–	–	
5/2 - Double Solenoid Impulse Control									
1	W6076B2407 W6376S2407	W6076B2417 W6376S2417	7 11	W6476B2407	W6476B2417	15	W6476B2408	W6476B2418	15
2	W6076B3407 W6376S3407	W6076B3417 W6376S3417	7 11	W6476B3407	W6476B3417	15	W6476B3408	W6476B3418	15
3	W6076B4407 W6376S4407	W6076B4417 W6376S4417	7 11	W6476B4407	W6476B4417	15	W6476B4408	W6476B4418	15
4	W6076B5407	W6076B5417	7	–	–		–	–	
5/3 - Double Solenoid - Closed Centre									
1	W6077B2401 W6377S2401	W6077B2411 W6377S2411	8 12	–	–		–	–	
2	W6077B3401 W6377S3401	W6077B3411 W6377S3411	8 12	–	–		–	–	
3	W6077B4401 W6377S4401	W6077B4411 W6377S4411	8 12	–	–		–	–	
4	W6077B5401	W6077B5411	8	–	–		–	–	
5/3 - Double Solenoid - Open Centre									
1	W6077B2407 W6377S2407	W6077B2417 W6377S2417	9 13	–	–		–	–	
2	W6077B3407 W6377S3407	W6077B3417 W6377S3417	9 13	–	–		–	–	
3	W6077B4407 W6377S4407	W6077B4417 W6377S4417	9 13	–	–		–	–	
4	W6077B5407	W6077B5417	9	–	–		–	–	

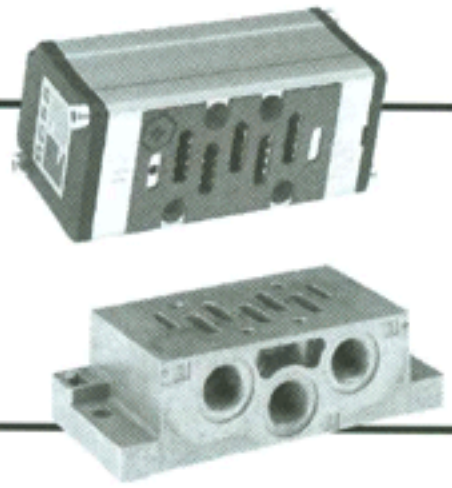
REMOTE PRESSURE CONTROL

ISO Size	Spool Valves	Page	Poppet Valves		Page
			Std. Temp.	Hi-Temp.	
5/2 - Single Pressure Control					
1	W6056B2411 W6356S2411	6 10	W6456B2411	W6456B2412	14
2	W6056B3411 W6356S3411	6 10	W6456B3411	W6456B3412	14
3	W6356B4411 W6356S4411	6 10	W6456B4411	W6456B4412	14
4	W6056B5411	6	–	–	
5/2 - Double Pressure Impulse Control					
1	W6056B2417 W6356S2417	7 11	W6456B2417	W6456B2418	15
2	W6056B3417 W6356S3417	7 11	W6456B3417	W6456B3418	15
3	W6056B4417 W6356S4417	7 11	W6456B4417	W6456B4418	15
4	W6056B5417	7	–	–	

ISO Size	Spool Valves	Page	Poppet Valves		Page
			Std. Temp.	Hi-Temp.	
5/3 - Double Pressure - Closed Centre					
1	W6057B2411 W6357S2411	8 12	–	–	
2	W6057B3411 W6357S3411	8 12	–	–	
3	W6357B4411 W6357S4411	8 12	–	–	
4	W6057B5411	8	–	–	
5/3 - Double Pressure - Open Centre					
1	W6057B2417 W6357S2417	9 13	–	–	
2	W6057B3417 W6357S3417	9 13	–	–	
3	W6057B4417 W6357S4417	9 13	–	–	
4	W6057B5417	9	–	–	

ROSS

ISO SPOOL and POPPET VALVES for BASE MOUNTING

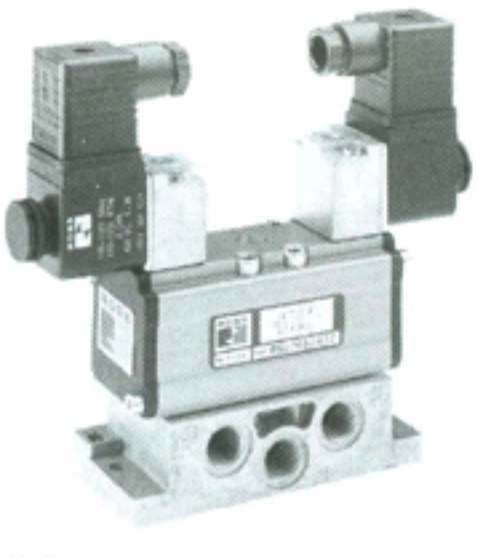


ISO INTERFACE

The ISO interface standards are internationally recognized and used throughout the world. Valves made for bases conforming to the interface standard ISO 5599/I are interchangeable regardless of manufacturer. Because of the extensive ROSS distribution network, ROSS ISO valves are available worldwide.

Pilot Control

All ROSS ISO valves are available with solenoid pilot control or for remote pressure control. Full line pressure is used to shift the valve so that the problem of valve sticking is minimized. There is no mechanical connection between pilot valve and operating valve as there is with direct-acting solenoid operators. This means that the plungers in ROSS solenoids move through their full travel, even if the valve is stuck, so that the solenoids are not subject to burnout.

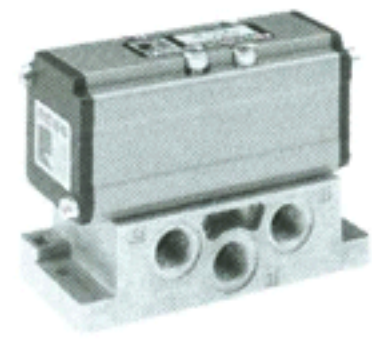


ISO valve with solenoid pilot control on side-ported sub-base

Electrical Connectors: Electrical power to the solenoids is supplied via drop cords with receptacle connectors which receive the prongs on the solenoid coils. These connectors are not supplied with the valves but must be ordered separately, either with or without wiring and with or without indicator lights. See page 17.

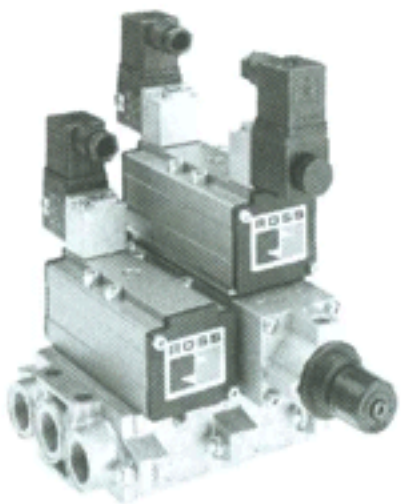
Manual Overrides: Solenoid pilots have non-locking or locking manual overrides as standard.

External Pilot Supply: Solenoid operated valves can be equipped with external pilot supply. Consult ROSS for details.



ISO valve for remote pressure control on side-ported sub-base.

SUB-BASES and MANIFOLDS



Valves with interposed flow controls and independent pressure plate on bottom ported manifold.

Sub-Bases: Side-ported sub-bases are available in port sizes ranging from G ¼ to G ¾. See page 19.

Manifolds: Manifolds are available with either bottom-ported or end-ported outlets. Port sizes range from G ¼ to G ¾. See pages 20, 22, 24, 26.

INTERPOSED UNITS

A pressure regulator, a flow control unit, or a pressure plate can be installed between valve and base to provide special functions.

Pressure Regulator: Especially useful in a manifold installation where the working pressure of one valve must be less than the supply pressure. See page 17.

Flow Controls: Provides separately adjustable air flow from both exhaust ports so that the speed of the cylinder controlled by the valve can be precisely set. See page 17.

Pressure Plate: Isolates a valve on a manifold from manifold inlet pressure. An independent supply can then be connected to the valve via an inlet port in the pressure plate. See pages 20, 22, 24, 26.

Transition Plate: Manifold installations can use ISO valves of different sizes by installing a transition plate between manifold stations of different size. See page 27 for more information.

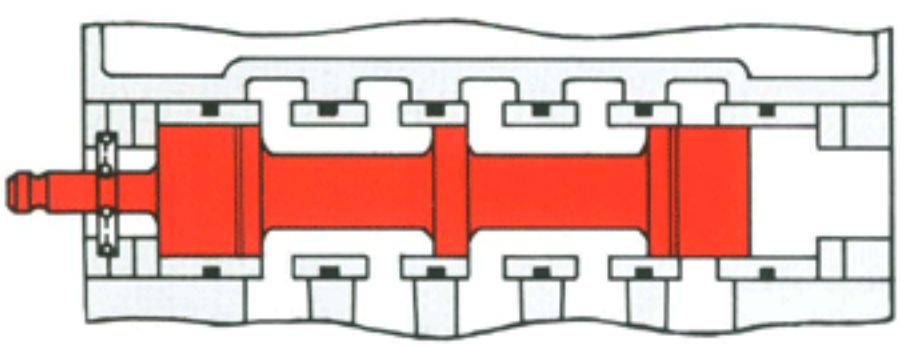
SERIES W60 and W63 - SPOOL VALVES

5-port 2-position and 3-position spool and sleeve valves are available in two different types of construction. These valves are excellent choices for service requiring high cycle rates or extremely long life. Their balanced spool design also makes these valves the best choice in selector, diverter or dual pressure service.

SPOOL VALVE CONSTRUCTION
Series W60, metal-to-metal

Matched spool and sleeve are precision finished, hardened, stainless steel. The spool moves on a micro-inch film of air between spool and sleeve so that wear is minimized. Designed for use in systems with or without air line lubrication.

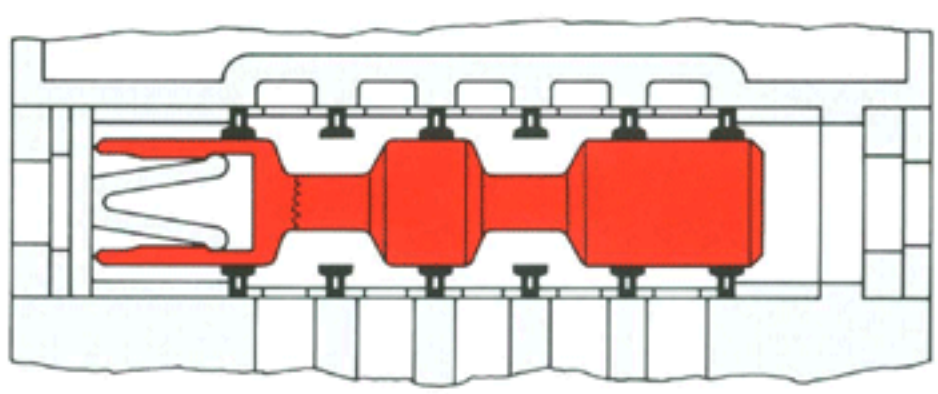
PRESSURE RANGE: vacuum to 16 bar.



SPOOL VALVE CONSTRUCTION
Series W63, resilient seal

The moving valve element in Series W63 valves is a polished high strength aluminium alloy spool, specially treated to reduce breakaway and running friction. The spool is supported by Buna-N Seals. Ample land length and resilient seals assure practically zero-leakage between ports.

PRESSURE RANGE: vacuum to 16 bar.



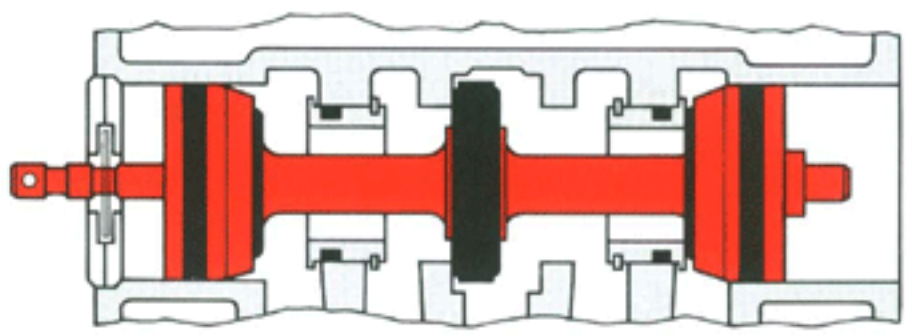
SERIES W64 - POPPET VALVES

The type of 5-port 2-position poppet valve available is shown at the bottom of the page. High velocity air flow across the poppet faces has a cleaning action that makes these valves especially suitable for use in a dirty environment. Offered in both standard temperature and high temperature versions, the latter tolerating media temperatures up to 105° C.

POPPET VALVE CONSTRUCTION

Metal internals (except seals) provide the ruggedness to cope with operation in a dirty environment. Floating exhaust poppet seats are self-adjusting to equalize wear and promote long life. After shutdown, the valve is ready to go because it does not build up breakaway resistance due to dirt and varnish. Designed for use in systems with or without air line lubrication.

PRESSURE RANGE: 2 to 10 bar (16 bar on request).

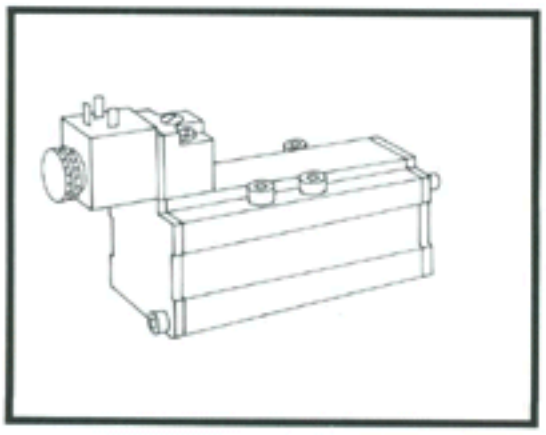


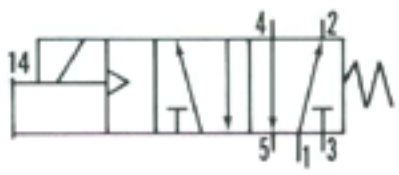
Series W60

BASE MOUNTING SPOOL VALVES
METAL-TO-METAL SEAL
SINGLE CONTROL

5/2 5 Ports 2 Positions

SINGLE SOLENOID PILOT CONTROL





STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz;
100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush;
8,5 VA holding on 50 or 60 Hz;
6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6076B2401 W6076B2411	0,8	900	0,5
2	non-locking locking	W6076B3401 W6076B3411	1,6	1800	0,9
3	non-locking locking	W6076B6401 W6076B4411	3,4	3800	1,6
4	non-locking locking	W6076B5401 W6076B5411	3,6	4200	1,9

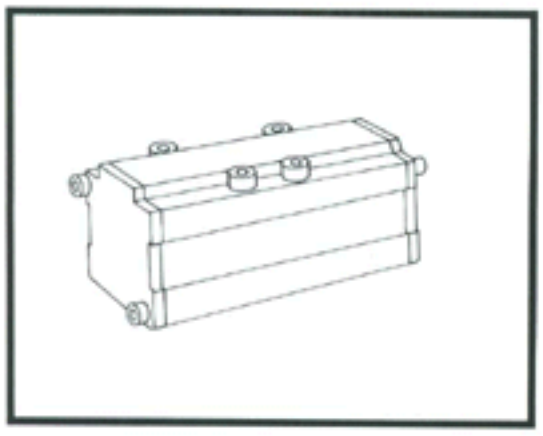
OPTIONS

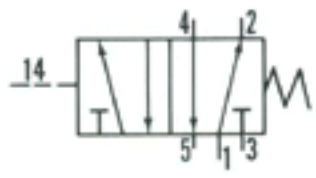
Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24, 26

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

SINGLE PRESSURE CONTROL





STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6056B2411	0,8	900	0,4
2	W6056B3411	1,6	1800	0,7
3	W6056B4411	3,4	3800	1,3
4	W6056B5411	3,6	4200	1,7

OPTIONS

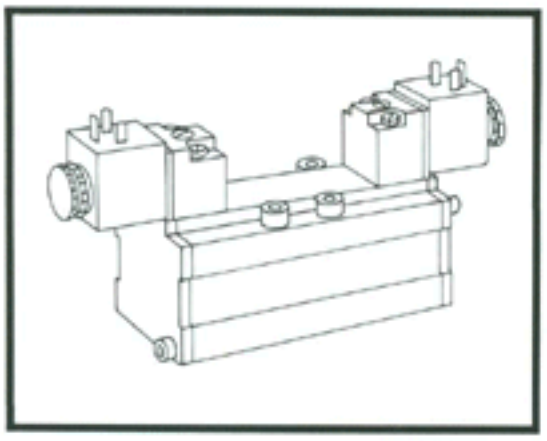
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

Series W60

BASE MOUNTING SPOOL VALVES
METAL-TO-METAL SEAL
DOUBLE CONTROL - MECHANICAL DETENT

5/2 5 Ports 2 Positions

DOUBLE SOLENOID PILOT CONTROL



VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6076B2407 W6076B2417	0,8	900	0,6
2	non-locking locking	W6076B3407 W6076B3417	1,6	1800	1,0
3	non-locking locking	W6076B6407 W6076B4417	3,4	3800	1,9
4	non-locking locking	W6076B5407 W6076B5417	3,6	4200	2,1

STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz; 100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush; 8,5 VA holding on 50 or 60 Hz; 6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

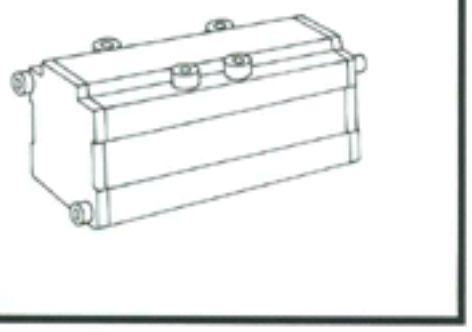
OPTIONS

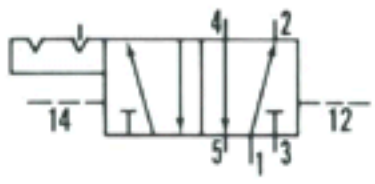
Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24, 26

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL





VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6056B2417	0,8	900	0,4
2	W6056B3417	1,6	1800	0,7
3	W6056B4417	3,4	3800	1,3
4	W6056B5417	3,6	4200	1,7

STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

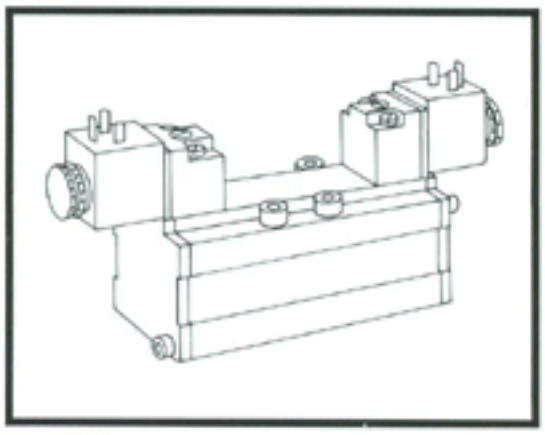
OPTIONS

Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

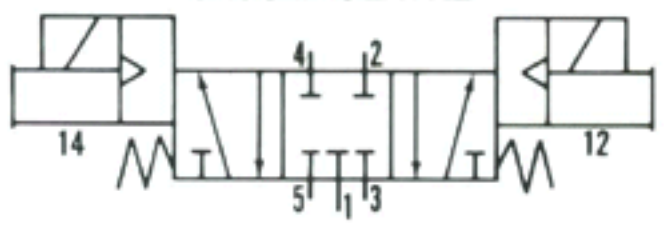
ROSS

Series **W60**	BASE MOUNTING SPOOL VALVES METAL-TO-METAL SEAL DOUBLE CONTROL - CLOSED CENTRE	**5/3**	5 Ports 3 Positions

DOUBLE SOLENOID PILOT CONTROL



CLOSED CENTRE



STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz; 100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush; 8,5 VA holding on 50 or 60 Hz; 6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6077B2401 W6077B2411	0,8	900	0,6
2	non-locking locking	W6077B3401 W6077B3411	1,6	1800	1,0
3	non-locking locking	W6077B6401 W6077B4411	3,4	3800	1,9
4	non-locking locking	W6077B5401 W6077B5411	3,6	4200	2,1

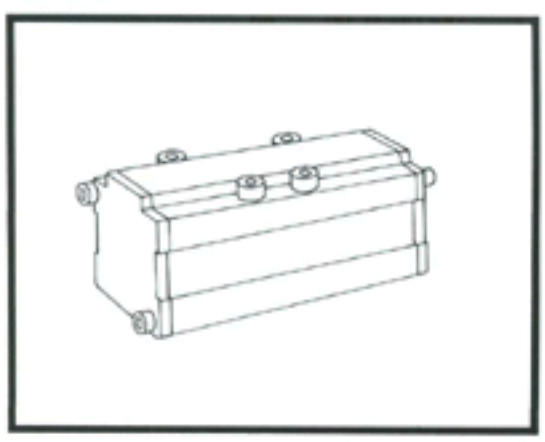
OPTIONS

Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

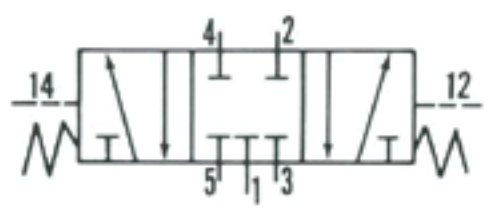
BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24, 26

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL



CLOSED CENTRE



STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6057B2411	0,8	900	0,6
2	W6057B3411	1,6	1800	0,7
3	W6057B4411	3,4	3800	1,3
4	W6057B5411	3,6	4200	1,7

OPTIONS

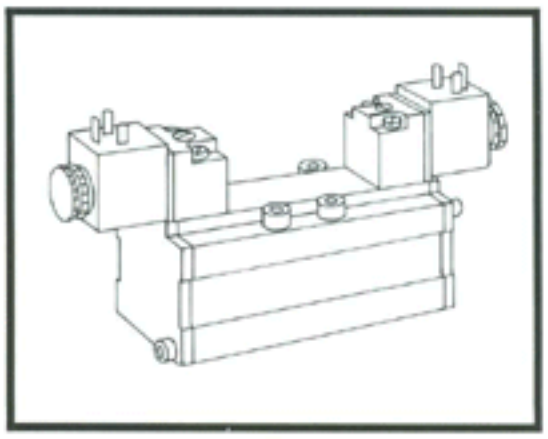
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

Series W60

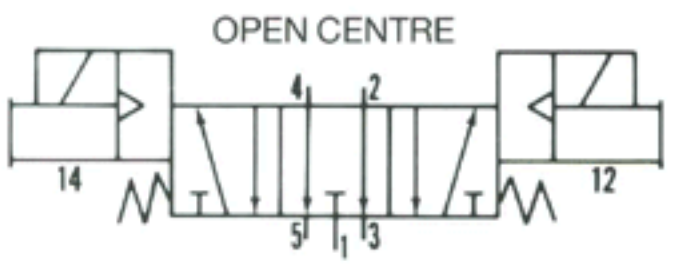
BASE MOUNTING SPOOL VALVES
METAL-TO-METAL SEAL
DOUBLE CONTROL - OPEN CENTRE

5/3 5 Ports 3 Positions

DOUBLE SOLENOID PILOT CONTROL



OPEN CENTRE



STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz; 100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush; 8,5 VA holding on 50 or 60 Hz; 6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6077B2407 W6077B2417	0,8	900	0,6
2	non-locking locking	W6077B3407 W6077B3417	1,6	1800	1,0
3	non-locking locking	W6077B6407 W6077B4417	3,4	3800	1,9
4	non-locking locking	W6077B5407 W6077B5417	3,6	4200	2,1

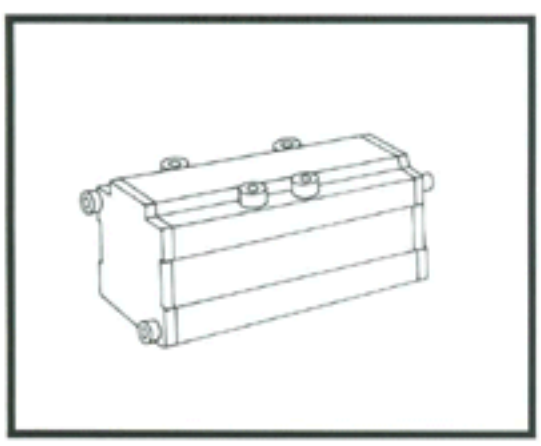
OPTIONS

Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

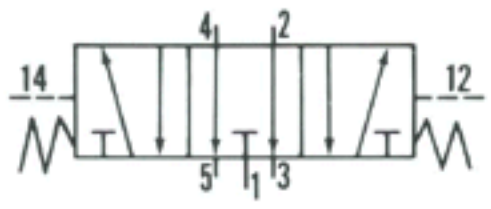
BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24, 26

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL



OPEN CENTRE



STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 10 bar (16 bar on request)

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2, 3 and 4: At least 1 bar.

VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6057B2417	0,8	900	0,6
2	W6057B3417	1,6	1800	0,7
3	W6057B4417	3,4	3800	1,3
4	W6057B5417	3,6	4200	1,7

OPTIONS

Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

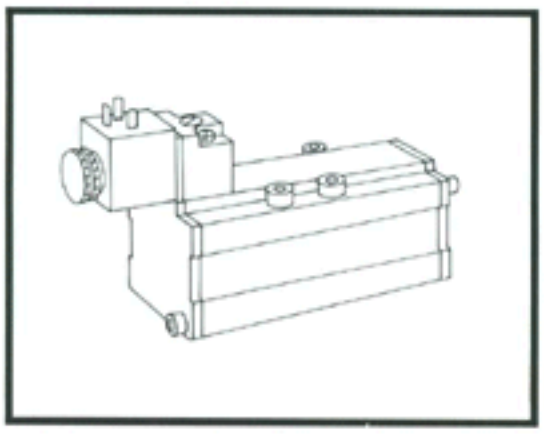
ROSS

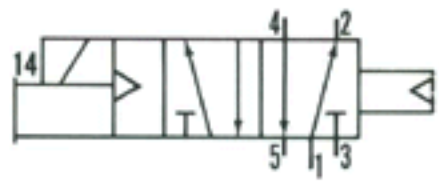
Series W63

BASE MOUNTING SPOOL VALVES
RESILIENT SEAL - SINGLE CONTROL

5/2 5 Ports 2 Positions

SINGLE SOLENOID PILOT CONTROL





STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz;
100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush;
8,5 VA holding on 50 or 60 Hz;
6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6376S2401 W6376S2411	1,0	1100	0,5
2	non-locking locking	W6376S3401 W6376S3411	2,2	2500	0,9
3	non-locking locking	W6376S4401 W6376S4411	4,0	4500	1,6

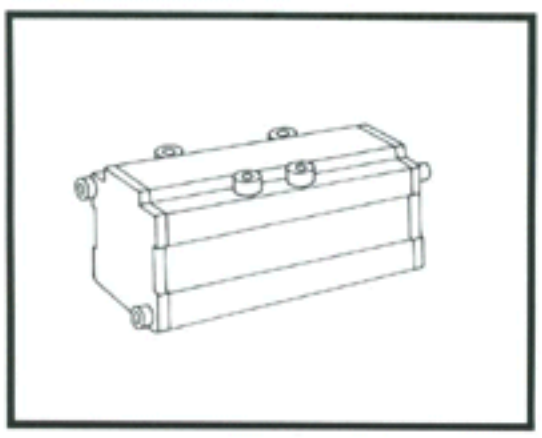
OPTIONS

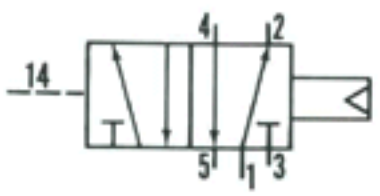
Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

SINGLE PRESSURE CONTROL





STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6356S2411	1,0	1100	0,4
2	W6356S3411	2,2	2500	0,7
3	W6356S4411	4,0	4500	1,3

OPTIONS

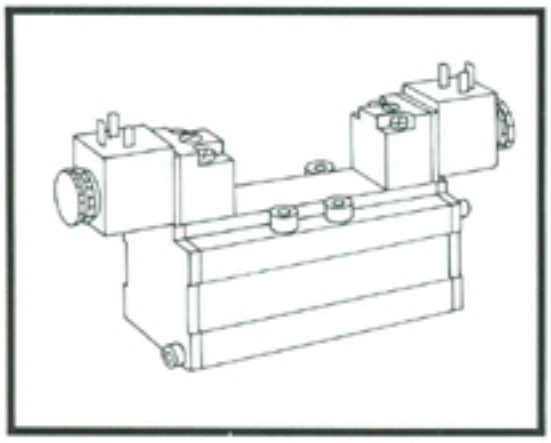
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

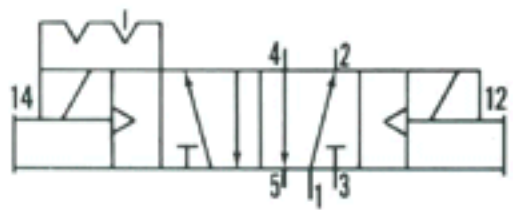
Series W63

BASE MOUNTING SPOOL VALVES
RESILIENT SEAL - DOUBLE CONTROL
MECHANICAL DETENT

5/2 5 Ports 2 Positions

DOUBLE SOLENOID PILOT CONTROL





VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6376S2407 W6376S2417	1,0	1100	0,6
2	non-locking locking	W6376S3407 W6376S3417	2,2	2500	1,0
3	non-locking locking	W6376S4407 W6376S4417	4,0	4500	1,9

STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz;
100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush;
8,5 VA holding on 50 or 60 Hz;
6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

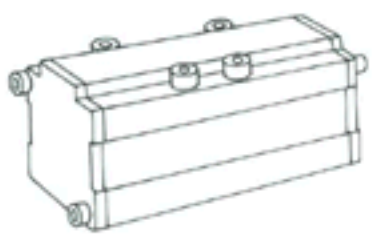
OPTIONS

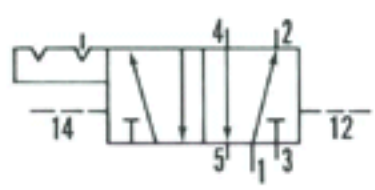
Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL





VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6356S2417	1,0	1100	0,4
2	W6356S3417	2,2	2500	0,7
3	W6356S4417	4,0	4500	1,3

STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

OPTIONS

Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

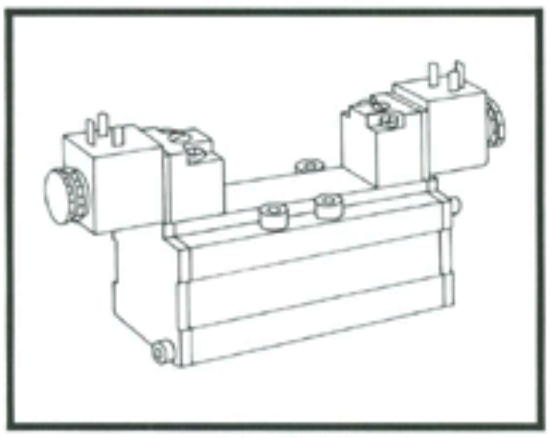
ROSS

Series W63

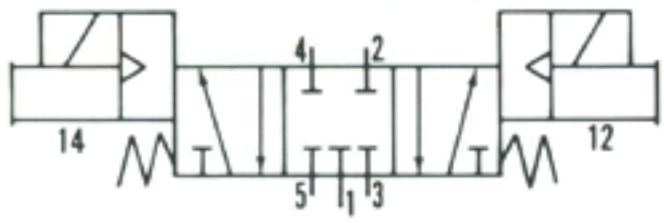
BASE MOUNTING SPOOL VALVES
RESILIENT SEAL - DOUBLE CONTROL
CLOSED CENTRE

5/3 5 Ports 3 Positions

DOUBLE SOLENOID PILOT CONTROL



CLOSED CENTRE



STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz;
100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush;
8,5 VA holding on 50 or 60 Hz;
6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6377S2401 W6377S2411	1,0	1100	0,6
2	non-locking locking	W6377S3401 W6377S3411	2,2	2500	1,0
3	non-locking locking	W6377S4401 W6377S4411	4,0	4500	1,9

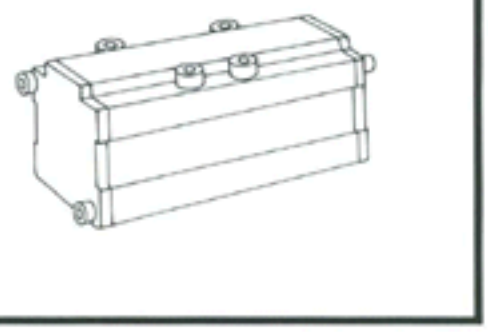
OPTIONS

Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

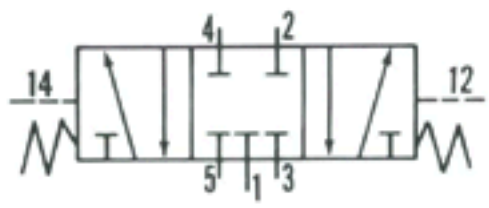
BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL



CLOSED CENTRE



STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6357S2411	1,0	1100	0,6
2	W6357S3411	2,2	2500	0,7
3	W6357S4411	4,0	4500	1,3

OPTIONS

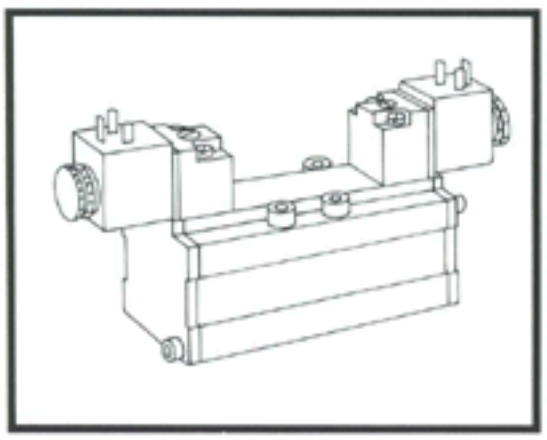
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

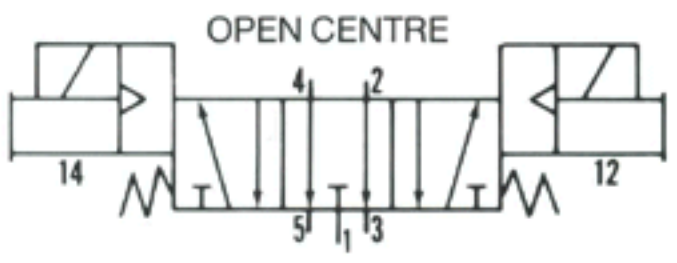
Series W63

BASE MOUNTING SPOOL VALVES
RESILIENT SEAL - DOUBLE CONTROL
OPEN CENTRE

5/3 5 Ports 3 Positions

DOUBLE SOLENOID PILOT CONTROL





STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz; 100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush; 8,5 VA holding on 50 or 60 Hz; 6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C.
Media: 4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	non-locking locking	W6377S2407 W6377S2417	1,0	1100	0,6
2	non-locking locking	W6377S3407 W6377S3417	2,2	2500	1,0
3	non-locking locking	W6377S4407 W6377S4417	4,0	4500	1,9

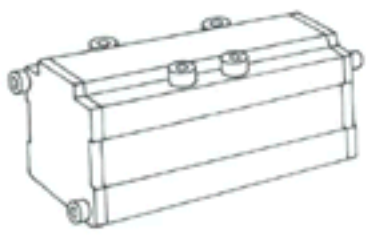
OPTIONS

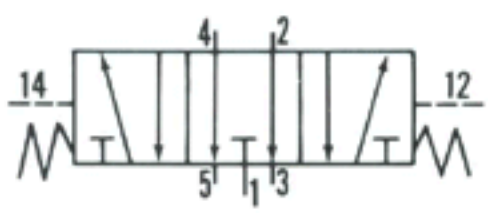
Connectors, Electrical: Page 17
Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL





STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C.

Flow Media: Filtered air.

Inlet Pressure:
Vacuum to 16 bar.

Pilot Pressure:
Size 1: At least 2 bar.
Sizes 2 and 3: At least 1 bar.

VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number	Average k_v-Value	Standard flow (l/min.)	Weight (kg)
1	W6357S2417	1,0	1100	0,6
2	W6357S3417	2,2	2500	0,7
3	W6357S4417	4,0	4500	1,3

OPTIONS

Flow Controls, Interposed: Page 17
Regulator, Interposed: Page 17

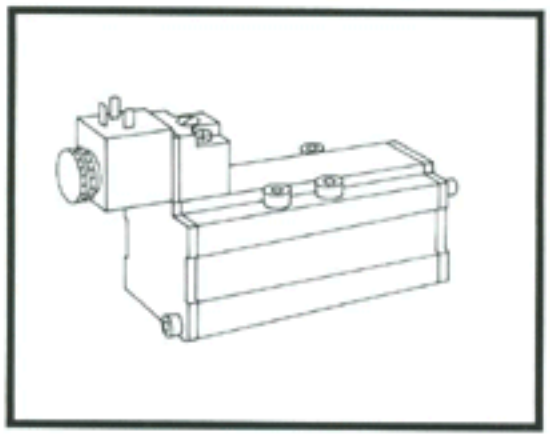
ROSS

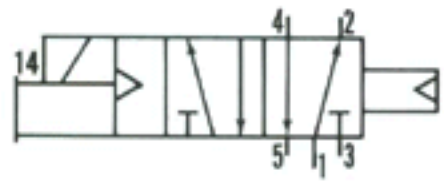
Series W64

BASE MOUNTING POPPET VALVES
SINGLE CONTROL

5/2 5 Ports 2 Positions

SINGLE SOLENOID PILOT CONTROL





STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz; 100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush; 8,5 VA holding on 50 or 60 Hz; 6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C; extended to 80° C for hi-temp models.
Media: 4° to 80° C; extended to 105° C for hi-temp models.

Flow Media: Filtered air.

Inlet-/Pilot Pressure: 2 to 10 bar.
Up to 16 bar on request.

OPTIONS

Connectors, Electrical: Page 17

Regulator, Interposed: Page 17

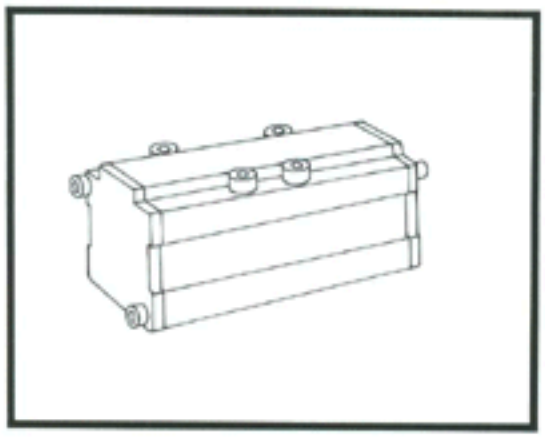
VALVE MODEL NUMBERS (Base & electrical connector not included)

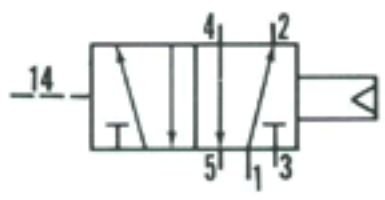
ISO Size	Manual Actuator	Model Number		Average k_v-Value	Standard flow (l/min.)	Weight (kg)
		Std-Temp.	Hi-Temp.			
1	non-locking-locking	W6476B2401 W6476B2411	W6476B2402 W6476B2412	0,8	900	0,5
2	non-locking locking	W6476B3401 W6476B3411	W6476B3402 W6476B3412	1,9	2100	0,9
3	non-locking locking	W6476B4401 W6476B4411	W6476B4402 W6476B4412	3,5	3900	1,6

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

SINGLE PRESSURE CONTROL





STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C. Media temperature extended to 105° C for hi-temp models.

Flow Media: Filtered air.

Inlet-/Pilot Pressure: 2 to 10 bar.
Up to 16 bar on request.

OPTIONS

Regulator, Interposed: Page 17

VALVE MODEL NUMBERS (Base not included)

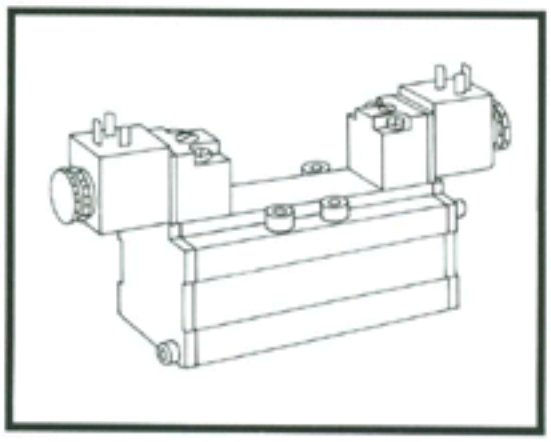
ISO Size	Model Number		Average k_v-Value	Standard flow (l/min.)	Weight (kg)
	Std-Temp.	Hi-Temp.			
1	W6456B2411	W6456B2412	0,8	900	0,3
2	W6456B3411	W6456B3412	1,9	2100	0,5
3	W6456B4411	W6456B4412	3,5	3900	1,0

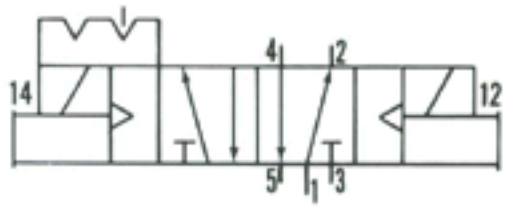
Series W64

BASE MOUNTING POPPET VALVES
DOUBLE CONTROL - MECHANICAL DETENT

5/2 5 Ports 2 Positions

DOUBLE SOLENOID PILOT CONTROL





VALVE MODEL NUMBERS (Base & electrical connector not included)

ISO Size	Manual Actuator	Model Number		Average k_v-Value	Standard flow (l/min.)	Weight (kg)
		Std-Temp.	Hi-Temp.			
1	non-locking locking	W6476B2407 W6476B2417	W6476B2408 W6476B2418	0,8	900	0,6
2	non-locking locking	W6476B3407 W6476B3417	W6476B3408 W6476B3418	1,9	2100	1,0
3	non-locking locking	W6476B4407 W6476B4417	W6476B4408 W6476B4418	3,5	3900	1,9

STANDARD SPECIFICATIONS

Solenoid: Rated for continuous duty.
Standard voltages: 100, 110 volts 50Hz; 100, 120 volts 60 Hz; 24, 110 volts d.c.

Power Consumption: 10,9 VA inrush; 8,5 VA holding on 50 or 60 Hz; 6 watts nominal on d.c.

Temperature Range:
Ambient: 4° to 50° C; extended to 80° C for hi-temp models.
Media: 4° to 80° C; extended to 105° C for hi-temp models.

Flow Media: Filtered air.

Inlet-/Pilot Pressure: 2 to 10 bar.
Up to 16 bar on request.

OPTIONS

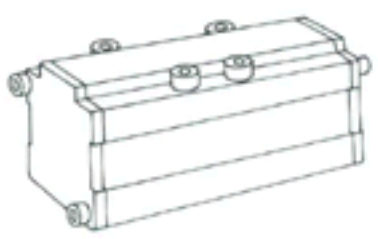
Connectors, Electrical: Page 17

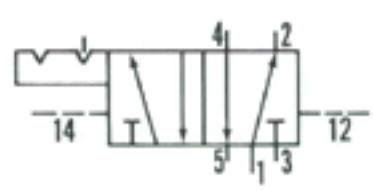
Regulator, Interposed: Page 17

BASES: Sub-bases on page 19
Manifolds on pages 20, 22, 24

NOTE: For flow rating formula please refer to page 2.
For valve dimensions please refer to page 16.

DOUBLE PRESSURE CONTROL





VALVE MODEL NUMBERS (Base not included)

ISO Size	Model Number		Average k_v-Value	Standard flow (l/min.)	Weight (kg)
	Std-Temp.	Hi-Temp.			
1	W6456B2417	W6456B2418	0,8	900	0,3
2	W6456B3417	W6456B3418	1,9	2100	0,5
3	W6456B4417	W6456B4418	3,5	3900	1,0

STANDARD SPECIFICATIONS

Ambient/Media Temperature:
4° to 80° C. Media temperature extended to 105° C for hi-temperature models.

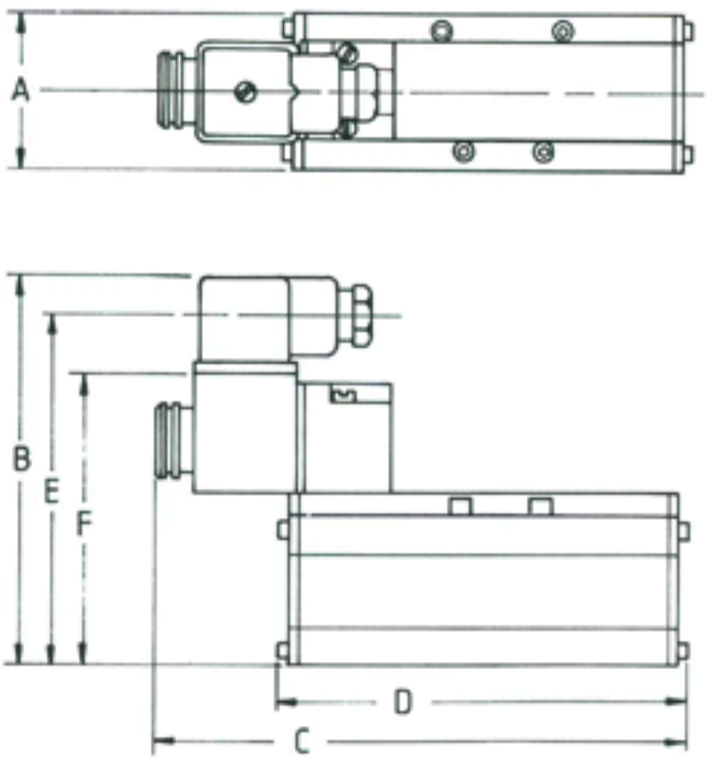
Flow Media: Filtered air.

Inlet-/Pilot Pressure: 2 to 10 bar.
Up to 16 bar on request.

OPTIONS

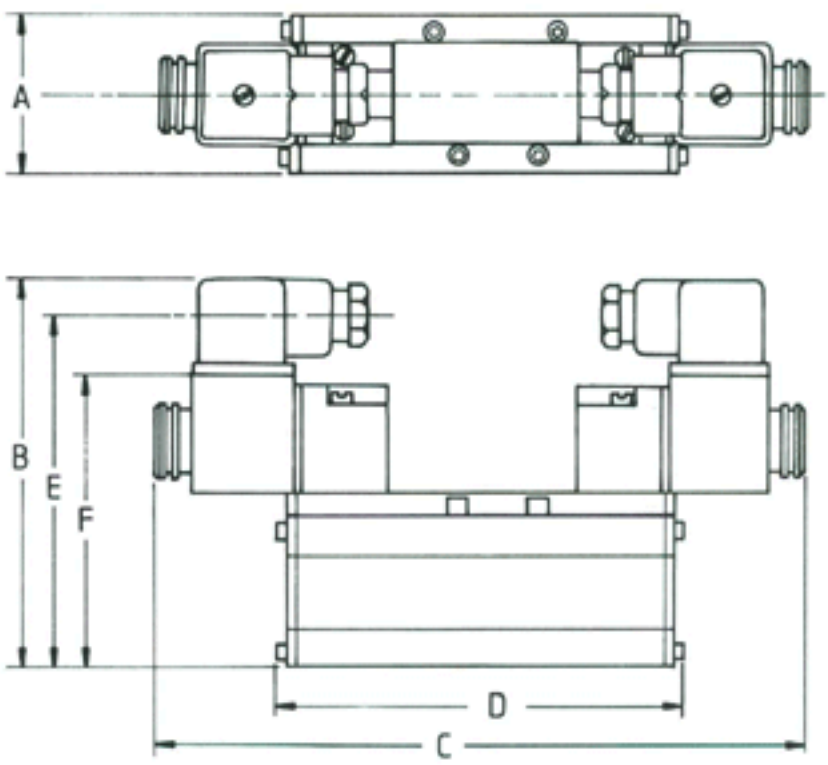
Regulator, Interposed: Page 17

VALVE DIMENSIONS mm



5/2 - SINGLE SOLENOID MODELS

	Series W60/64				Series W63		
	ISO 1	ISO 2	ISO 3	ISO 4	ISO 1	ISO 2	ISO 3
A	42	53	65	76	42	53	65
B	118	125	132	132	118	125	132
C	137	160	160	175	134	159	160
D	105	126	150	160	105	131	160
E	108	115	122	122	108	115	122
F	82	90	94	94	82	90	94



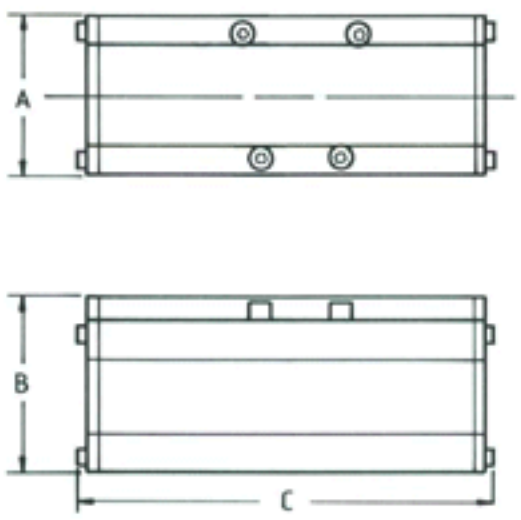
5/2 - DOUBLE SOLENOID MODELS

	Series W60/64				Series W63		
	ISO 1	ISO 2	ISO 3	ISO 4	ISO 1	ISO 2	ISO 3
A	42	53	65	76	42	53	65
B	118	125	132	132	118	125	132
C	175	192	172	190	173	179	150
D	104	127	152	160	108	122	150
E	108	115	122	122	108	115	122
F	82	90	94	94	82	90	94

5/3 - DOUBLE SOLENOID MODELS

	Series W60/64				Series W63		
	ISO 1	ISO 2	ISO 3	ISO 4	ISO 1	ISO 2	ISO 3
A	42	53	65	76	42	53	65
B	118	125	132	132	118	125	132
C	170	195	172	190	173	187	203
D	107	135	158	160	107	187	203
E	108	115	122	122	108	115	122
F	82	90	94	94	82	90	94

Note: Dimensions of solenoid models include electrical connectors. These connectors are not included with the valve, but must be ordered separately. See Page 17.

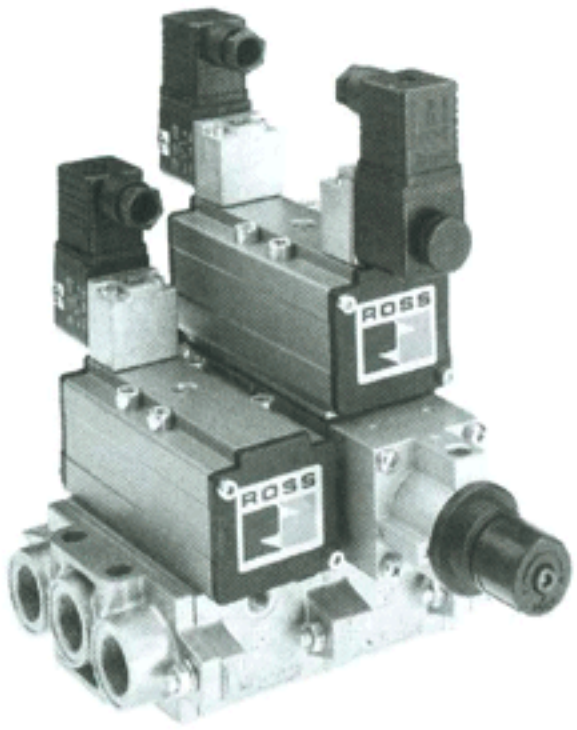


5/2 - PRESSURE CONTROLLED MODELS

	Series W60/64				Series W63		
	ISO 1	ISO 2	ISO 3	ISO 4	ISO 1	ISO 2	ISO 3
A	42	53	65	76	42	53	65
B	47	54	59	59	47	54	59
C	105	126	152	160	108	134	160

5/3 - PRESSURE CONTROLLED MODELS

	Series W60/64				Series W63		
	ISO 1	ISO 2	ISO 3	ISO 4	ISO 1	ISO 2	ISO 3
A	42	53	65	76	42	53	65
B	47	54	59	59	47	54	59
C	107	135	158	160	107	187	203



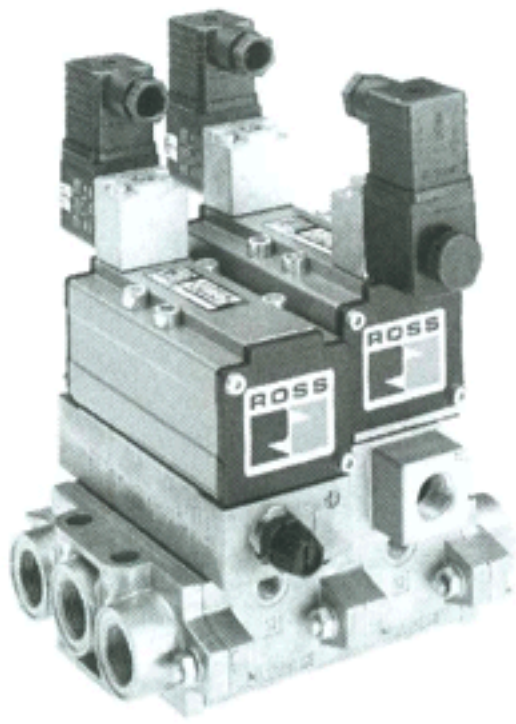
Valve with interposed pressure regulator shown on 2-station manifold. Locknut keeps pressure setting held firmly against movement by vibration.

INTERPOSED PRESSURE REGULATORS

When an individual valve in a manifold installation must work at a lower pressure than that supplied to the manifold, a pressure regulator can be installed between valve and base to reduce the pressure supplied to the valve. Because it is interposed between valve and base, this type of regulator requires no special piping and provides a very compact installation. Mounting hardware, gasket, and gauge are included. Pressure can be adjusted anywhere in the range of 0.3 to 8.5 bar. Maximum inlet pressure is 10 bar.

Order by the following part numbers:

ISO 1: 697K77
ISO 2: 693K77
ISO 3: 707K77



Valve in foreground is shown with interposed flow control unit. Other valve is mounted on an interposed pressure plate (for suppliying an individual valve with a different pressure from an independent source - See manifold pages for more information).

INTERPOSED FLOW CONTROLS for SPOOL VALVES (Series W60 only)

An interposed flow control unit is designed to regulate the exhaust flow of air from a pneumatic cylinder and thereby control the speed of the cylinder. There are two separate controls to regulate the air flow from each end of the cylinder so that the speeds of extension and retraction can be set independently. Because it is located between valve and base, the flow control unit requires no additional piping. The flow control unit is designed to function without lubrication or routine maintenance. Mounting hardware and a gasket are included with each unit. Available only for Series W60 spool valves.

Order by the following part numbers:

ISO 1: 701B77
ISO 2: 702B77
ISO 3: 722K77

ELECTRICAL CONNECTORS

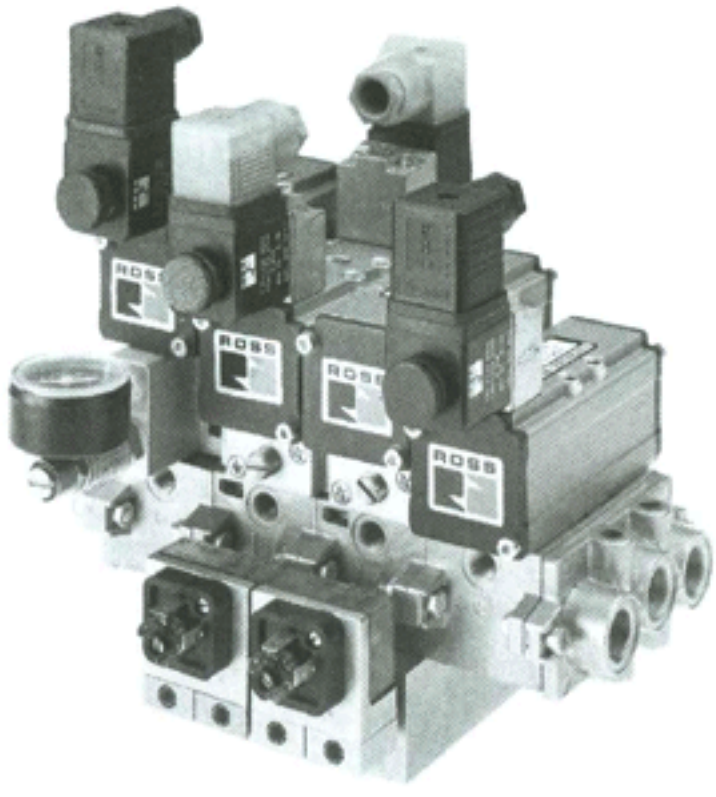
Electrical receptacle connectors are required to connect the valve solenoids to the cables supplying electrical power. Each connector can be oriented so that the cord can exit in any one of four directions: outboard, inboard, to the right or to the left of the valve centreline.

Order by the following part numbers:

Connector without indicator light: 937K87
Connector with indicator light*: 936K87

* Specify solenoid voltage.

SPECIAL VALVES



Valve battery mounted according to specifications of the automotive industry.

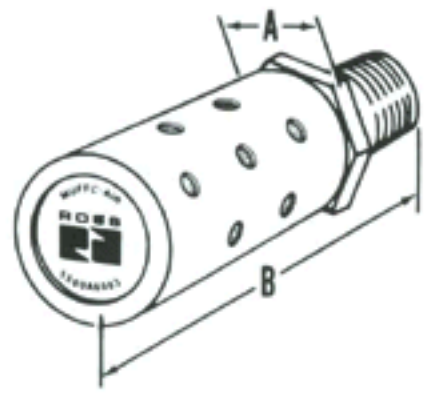
In addition to the ISO valves described in this Bulletin ROSS offers a number of valves which are designed to meet the specific requirements of special applications:

- operating pressure up to a maximum of 16 bar
- monostable function with differential pressure piston for internal pressure return
- pilot valves in various designs:
  - without manual actuator
  - with locking-type manual actuator
  - with non-locking-type manual actuator

It goes without saying that the unit shown here is just one assembly option in the broad line of ROSS ISO valves.

ROSS has the ways and means to solve your application problems. Consult ROSS or your local ROSS distributor for specific information.

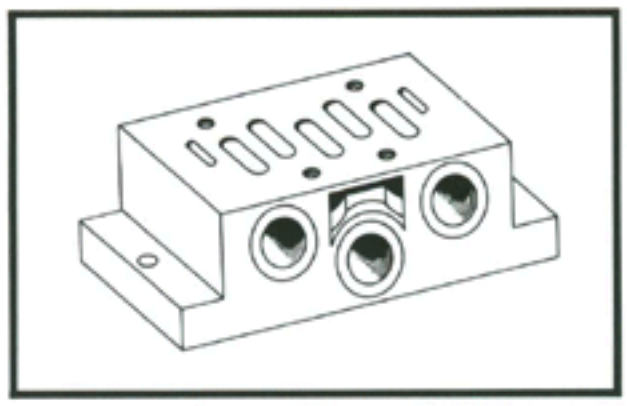
MUFFL-AIR® SILENCERS



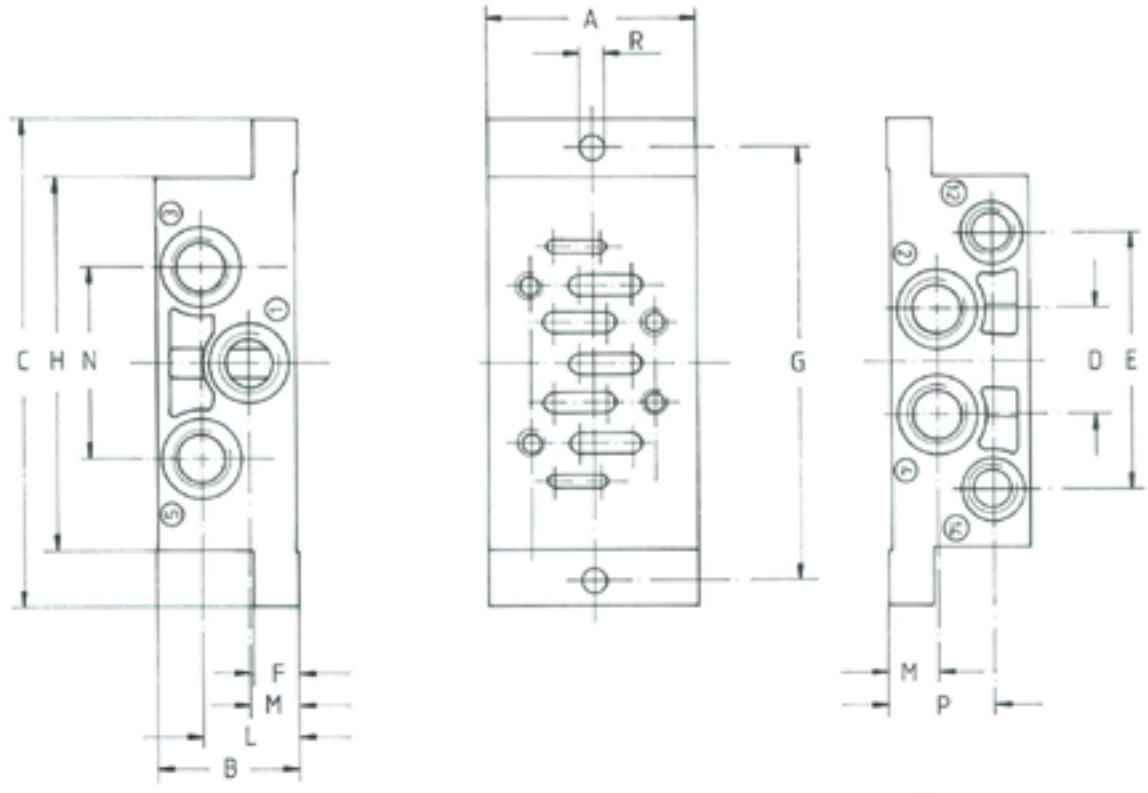
Port Size G	Model Number	Dimensions mm	
		A	B
1/8 1/4 3/8	D5500A1003 D5500A2003 D5500A3013	21	56
3/8 1/2 3/4	D5500A3003 D5500A4003 D5500A5013	32	96
3/4 1	D5500A5003 D5500A6003	51	142

SPECIFICATION
MUFFL-AIR® silencers substantially reduce exhaust noise levels yet produce little back pressure. Typical impact noise reduction is in the 20-25 db range.
Pressure: 16 bar maximum.

SIDE-PORTED SUB-BASES FOR ISO-VALVES
- VDMA 24345, FORM A -



ISO Size	Sub-Base Number	PORT SIZES					Weight (kg)
		Inlet ①	Outlet ②④	Exhaust ③⑤	Remote Pilot Signal ⑫	External Pilot Supply or Remote Pilot Signal ⑭	
1	D600C01	G ¼	G ¼	G ¼	G ⅛	G ⅛	0,2
2	D601C01	G ⅜	G ⅜	G ⅜	G ⅛	G ⅛	0,3
3	D602C01	G ½	G ½	G ½	G ⅛	G ⅛	0,4
4	D654K01	G ¾	G ¾	G ¾	G ⅛	G ⅛	0,5



Dimensions - mm

Dimensions - mm

	ISO 1	ISO 2	ISO 3	ISO 4		ISO 1	ISO 2	ISO 3	ISO 4
A	48	57	71	85	H	84	95	119	148
B	32	40	32	42	L	21,5	26	17	22
C	110	124	149	186	M	10,5	14	17	22
D	24	30	32	42	N	43	56	68	90
E	58	74	90	111	P	23,5	30	22	30
F	10	13	18	19	R	5,5	6,6	6,6	9
G	98	112	136	170					

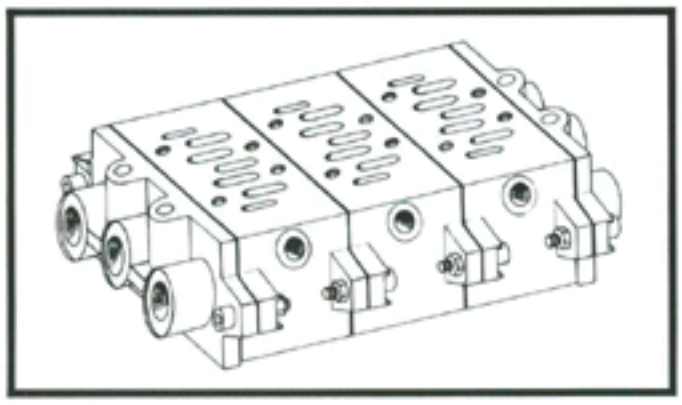
ISO-MANIFOLDS SIZE 1
- VDMA 24345, FORM C and D -

MANIFOLD STATION, FORM C (G ¼)

Model-No: D460K91
Weight: 0,2 kg

END STATION KIT, FORM D (G ⅜)

Model-No: D326K86
Weight: 0,2 kg

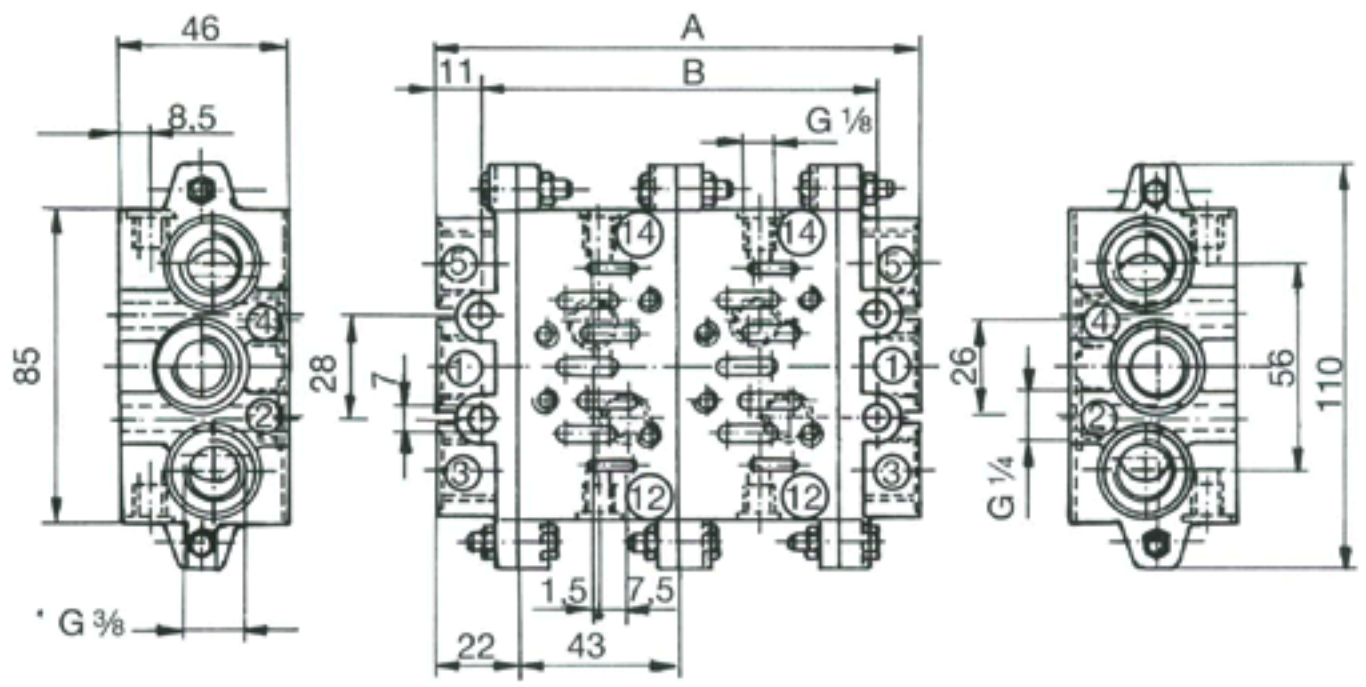


An end station kit must be ordered for each manifold installation. The kit includes two end plates. End plates and manifold stations are supplied with all hardware and seals needed for assembly.

Assembled Manifolds: Complete valve and manifold assemblies to user's specification can be supplied. Ask your local ROSS distributor for detailed information.

Transition Plates: Specific transition plates are available for connecting ISO manifolds of different sizes. See page 27.

Independent Pressure Plates (Kit D703K77): A pressure plate installed between valve and base isolates that valve from the manifold inlet pressure. An independent supply can then be connected to the valve via a G¼ inlet port.

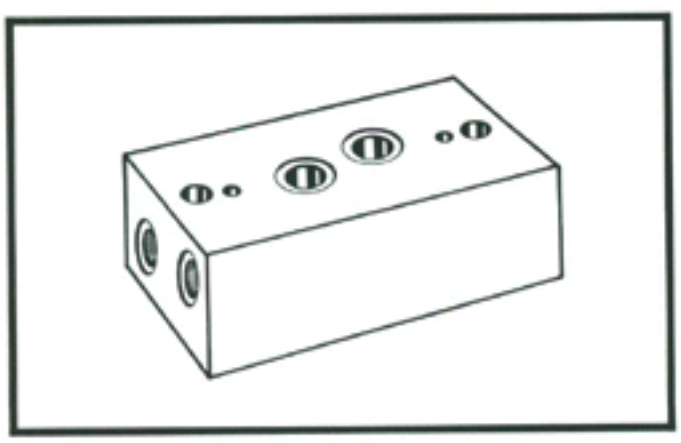


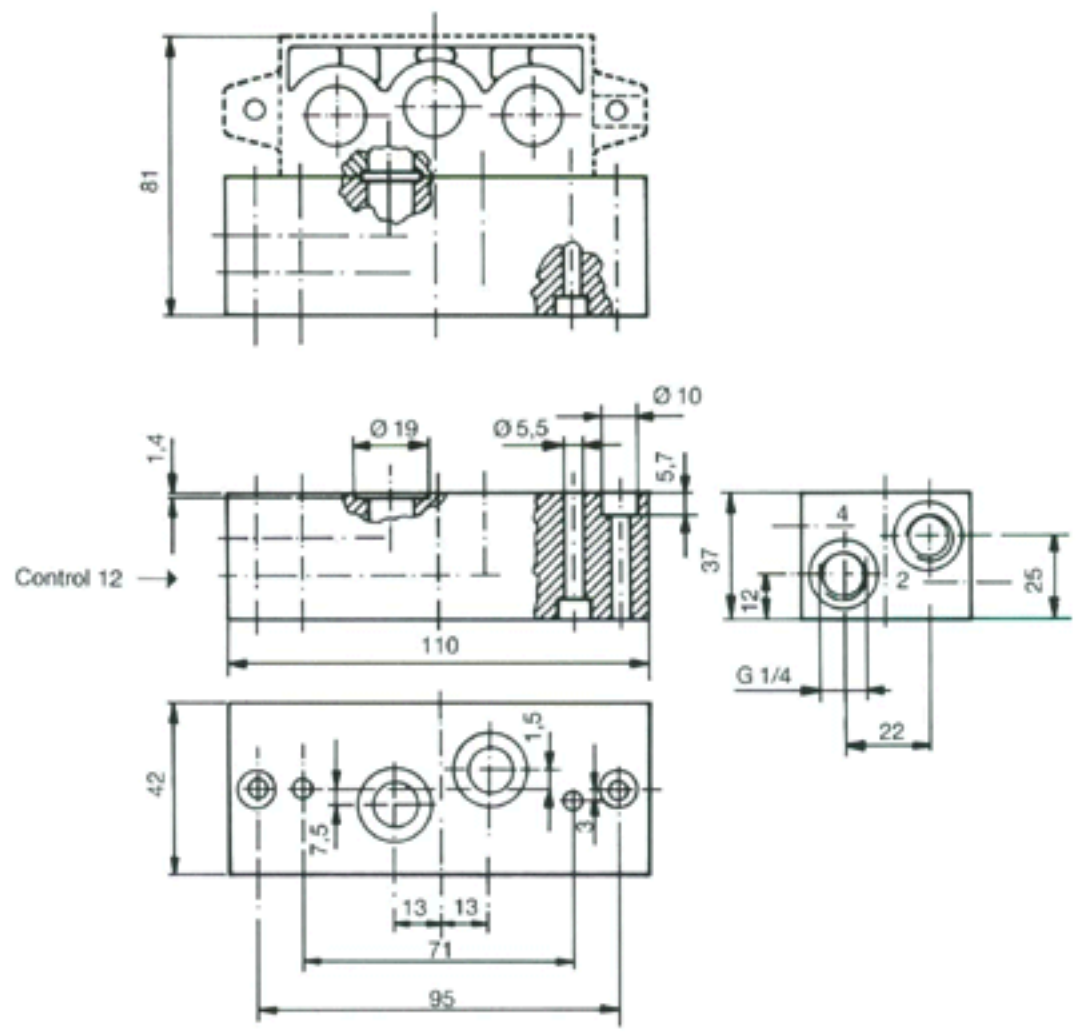
Dimensions mm	Number of Manifold Stations					
	2	3	4	5	6	7
A	130	173	216	259	302	345
B	108	151	194	237	280	323

Ports		
(1)	Inlet Port	G ⅜
(2) (4)	Outlet Ports	G ¼
(3) (5)	Exhaust Ports	G ⅜
(12) (14)	Pilot Supply Ports	G ⅛

ADAPTORS FOR SIDE-PORTING, ISO SIZE 1
- VDMA 24345, FORM E -

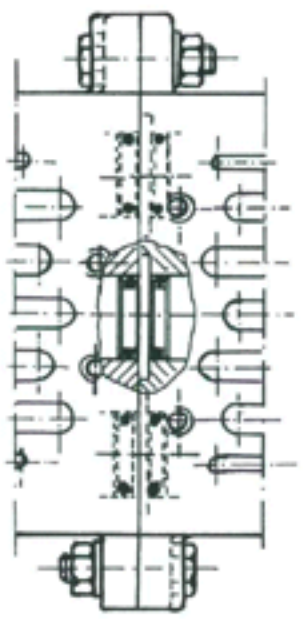
Model-No: **D324K86**
Weight: 0,4 kg





BLOCKING DISC, ISO SIZE 1

Model-No: **235A40**



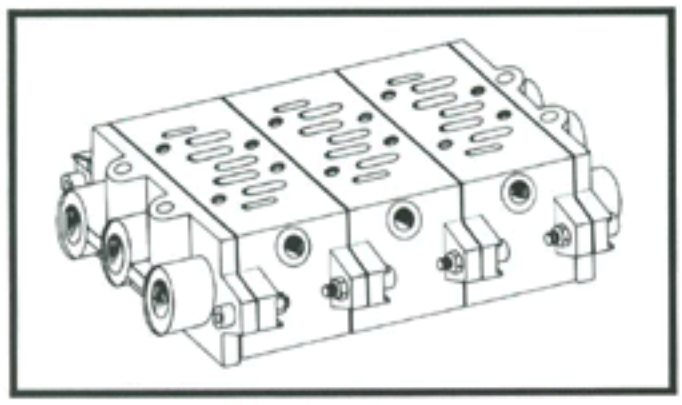
ISO-MANIFOLDS SIZE 2
- VDMA 24345, FORM C and D -

MANIFOLD STATION, FORM C (G 3/8)

Model-No: D461K91
Weight: 0,4 kg

END STATION KIT, FORM D (G ½)

Model-No: D327K86
Weight: 0,3 kg

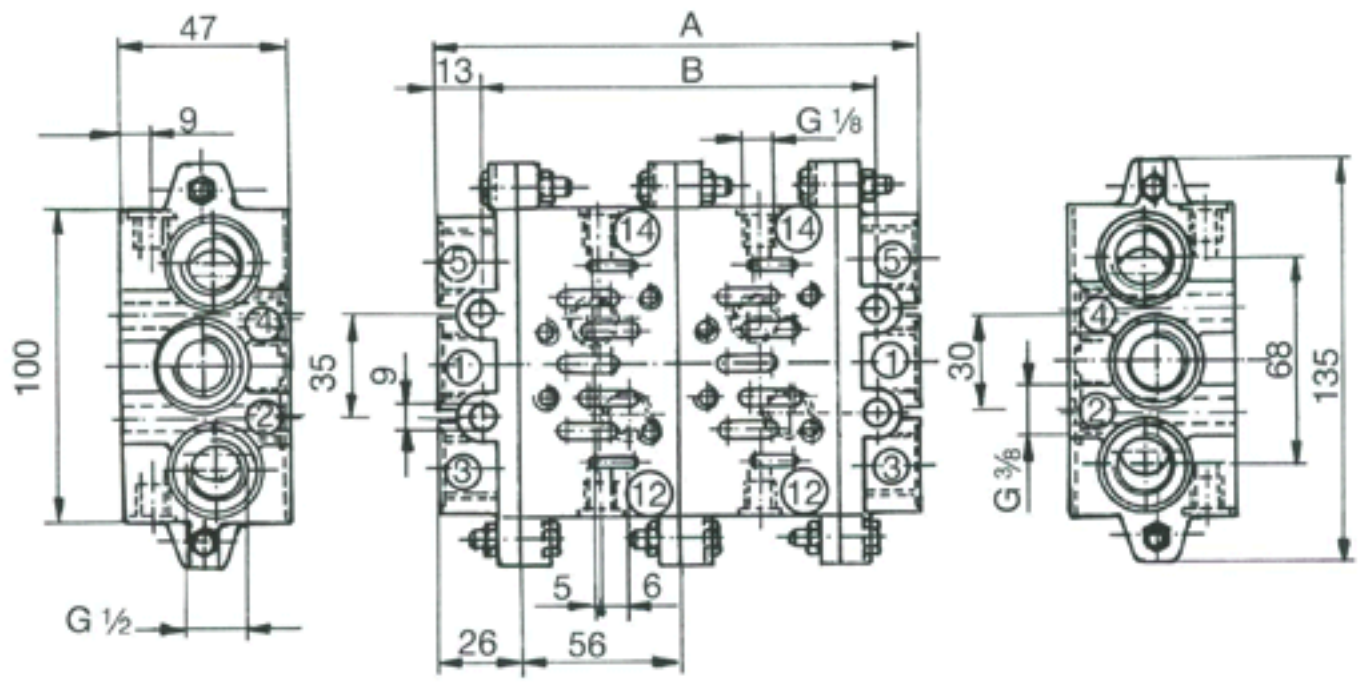


An end station kit must be ordered for each manifold installation. The kit includes two end plates. End plates and manifold stations are supplied with all hardware and seals needed for assembly.

Assembled Manifolds: Complete valve and manifold assemblies to user's specification can be supplied. Ask your local ROSS distributor for detailed information.

Transition Plates: Specific transition plates are available for connecting ISO manifolds of different sizes. See page 27.

Independent Pressure Plates (Kit D692K77): A pressure plate installed between valve and base isolates that valve from the manifold inlet pressure. An independent supply can then be connected to the valve via a G3/8 inlet port.

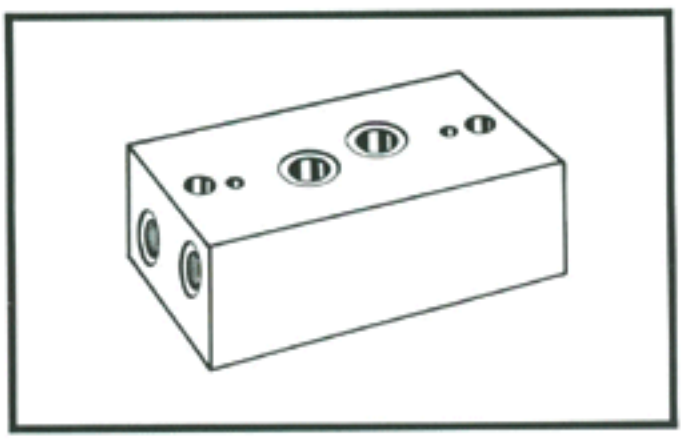


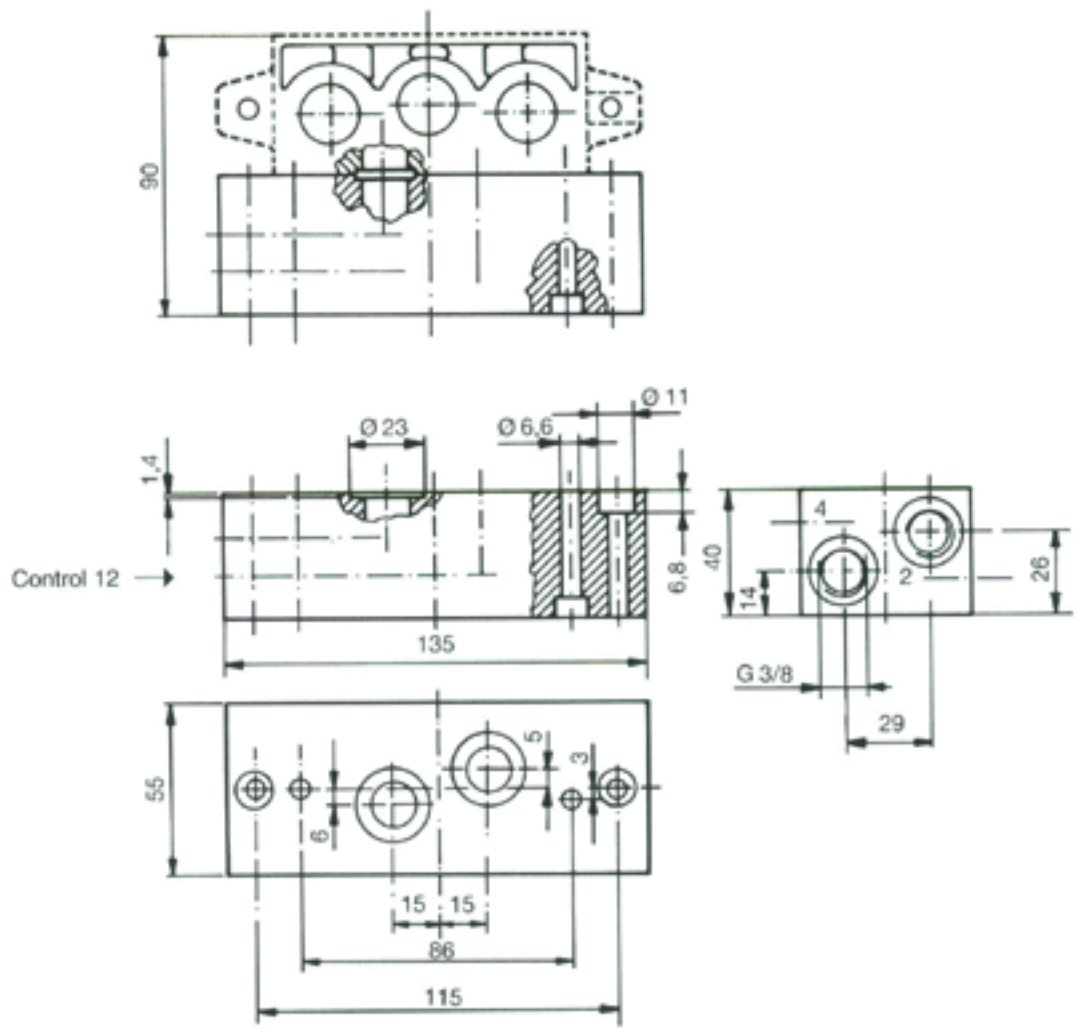
Dimensions mm	Number of Manifold Stations					
	2	3	4	5	6	7
A	164	220	276	332	388	444
B	136	192	248	304	360	416

Ports		
1	Inlet Port	G ½
2 4	Outlet Ports	G 3/8
3 5	Exhaust Ports	G ½
12 14	Pilot Supply Ports	G ⅛

ADAPTORS FOR SIDE-PORTING, ISO SIZE 2
- VDMA 24345, FORM E -

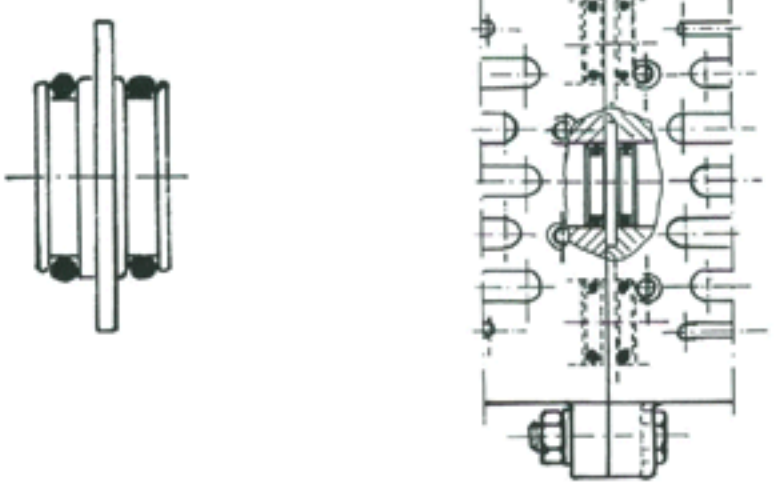
Model-No: **D346K86**
Weight: 0,6 kg





BLOCKING DISC, ISO SIZE 2

Model-No: **236A40**



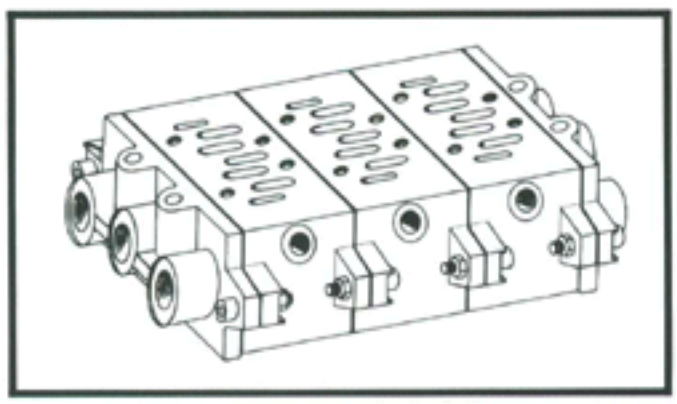
ISO-MANIFOLDS SIZE 3
- VDMA 24345, FORM C and D -

MANIFOLD STATION, FORM C (G ½)

Model-No: D462K91
Weight: 0,6 kg

END STATION KIT, FORM D (G 1)

Model-No: D328K86
Weight: 0,6 kg

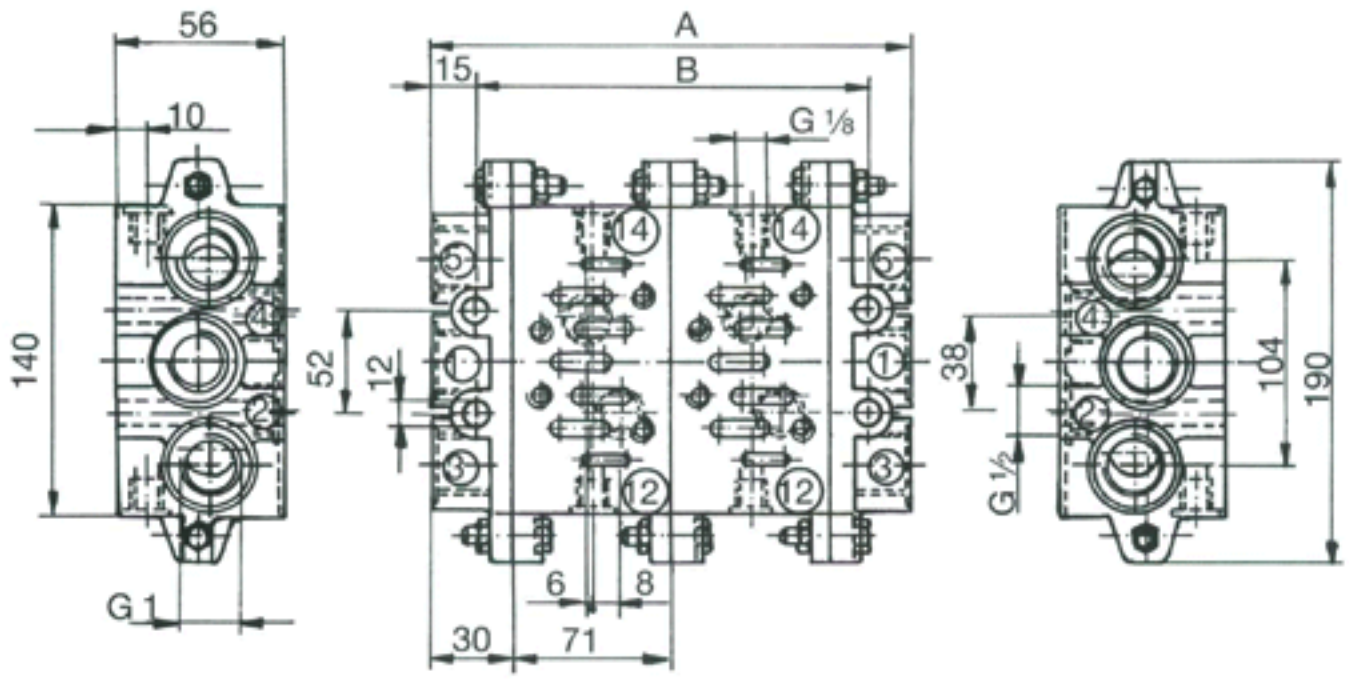


An end station kit must be ordered for each manifold installation. The kit includes two end plates. End plates and manifold stations are supplied with all hardware and seals needed for assembly.

Assembled Manifolds: Complete valve and manifold assemblies to user's specification can be supplied. Ask your local ROSS distributor for detailed information.

Transition Plates: Specific transition plates are available for connecting ISO manifolds of different sizes. See page 27.

Independent Pressure Plates (Kit D715K77): A pressure plate installed between valve and base isolates that valve from the manifold inlet pressure. An independent supply can then be connected to the valve via a G½ inlet port.

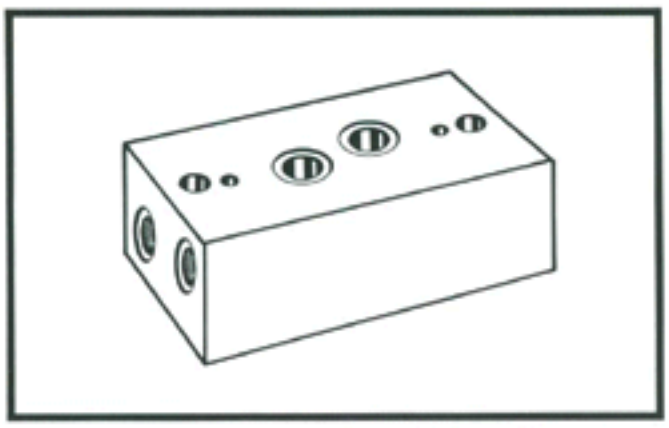


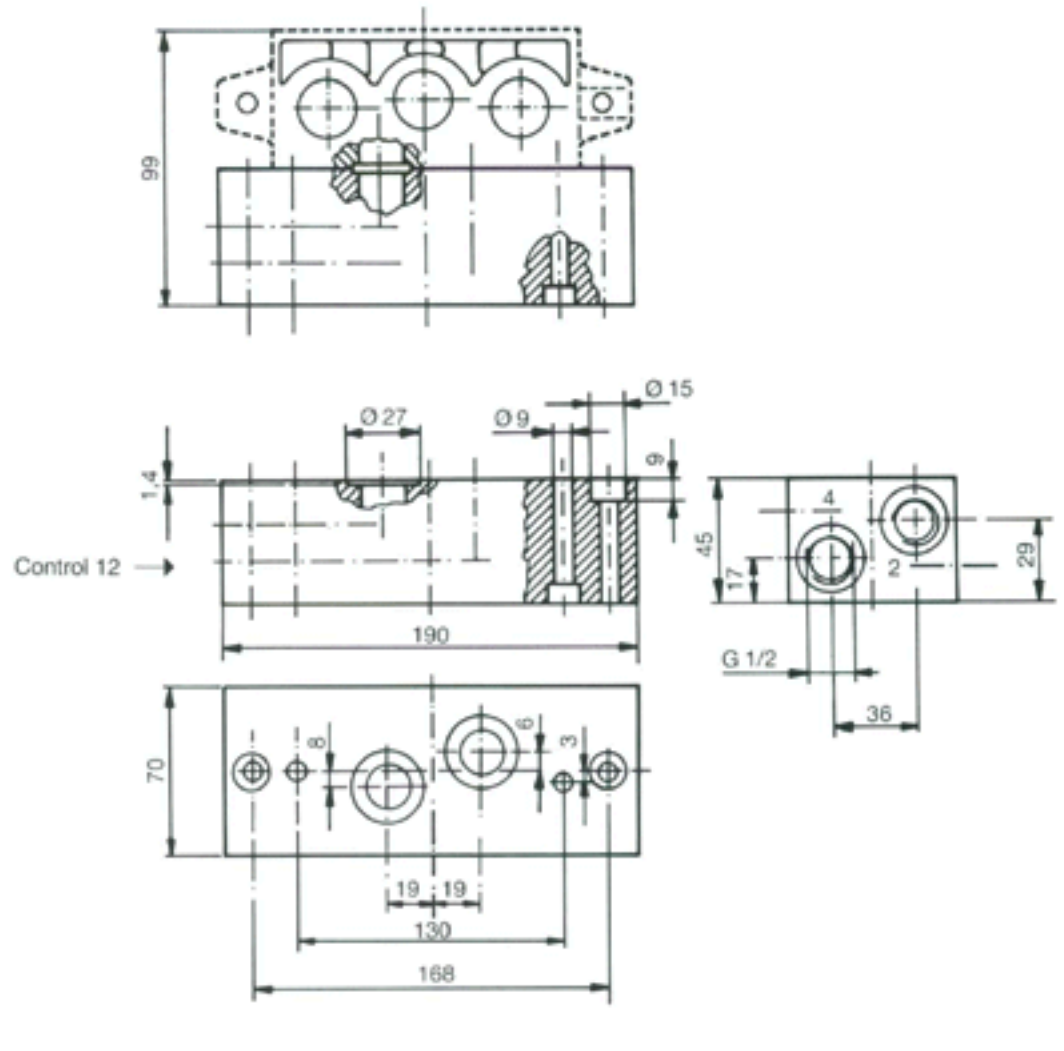
Dimensions mm	Number of Manifold Stations					
	2	3	4	5	6	7
A	202	273	344	415	486	557
B	172	243	314	385	456	527

Ports		
(1)	Inlet Port	G 1
(2) (4)	Outlet Port	G ½
(3) (5)	Exhaust Ports	G 1
(12) (14)	Pilot Supply Ports	G ⅛

ADAPTORS FOR SIDE-PORTING, ISO SIZE 3
- VDMA 24345, FORM E -

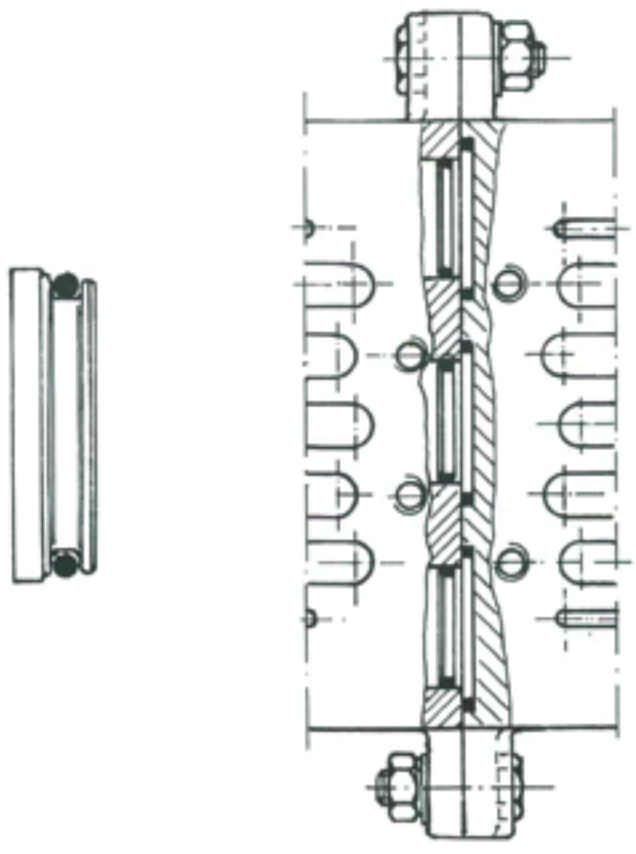
Model-No: **D325K86**
Weight: 0,8 kg





BLOCKING DISC, ISO SIZE 3

Model-No: **237A40**



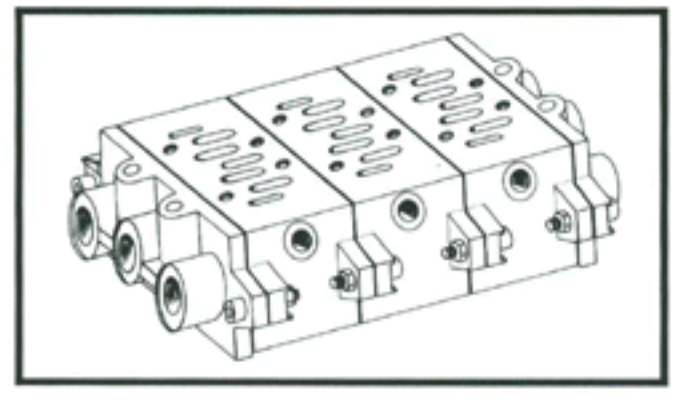
ISO-MANIFOLDS SIZE 4
- VDMA 24345, FORM C and D -

MANIFOLD STATION, Form C (G ¾)

Model-No: D599K91
Weight: 1,3 kg

END STATION KIT, FORM D (G 1)

Model-No: D368K86
Weight: 0,9 kg

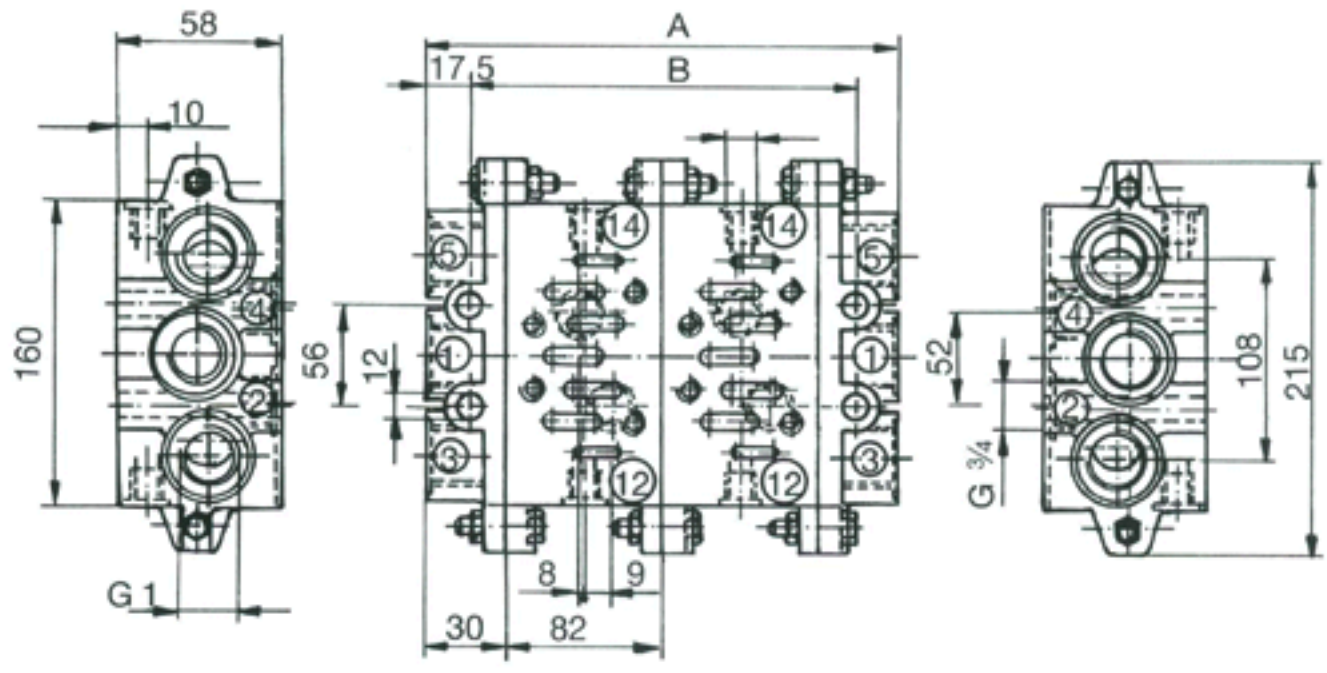


An end station kit must be ordered for each manifold installation. The kit includes two end plates. End plates and manifold stations are supplied with all hardware and seals needed for assembly.

Assembled Manifolds: Complete valve and manifold assemblies to user's specification can be supplied. Ask your local ROSS distributor for detailed information.

Transition Plates: Specific transition plates are available for connecting ISO manifolds of different sizes. See page 27.

Independent Pressure Plates (Kit D989K77): A pressure plate installed between valve and base isolates that valve from the manifold inlet pressure. An independent supply can then be connected to the valve via a G ¾ inlet port.



Dimensions mm	Number of Manifold Stations					
	2	3	4	5	6	7
A	224	306	388	470	552	634
B	189	271	353	435	517	599

Ports		
(1)	Inlet Port	G 1
(2) (4)	Outlet Ports	G ¾
(3) (5)	Exhaust Ports	G 1
(12) (14)	Pilot Supply Ports	G ⅛

ISO TRANSITION PLATES

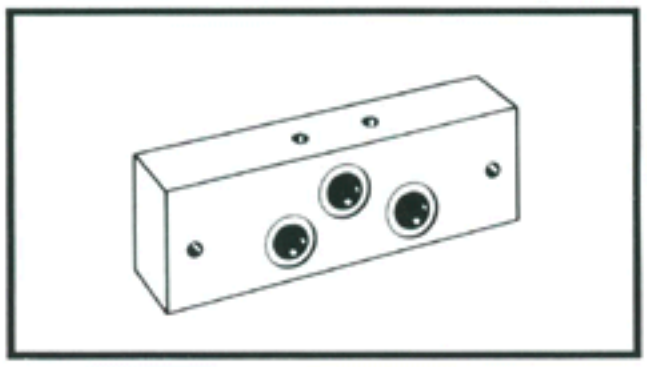
ISO 1 – 2: **Model-No.: D355K86**
Weight: 0,3 kg

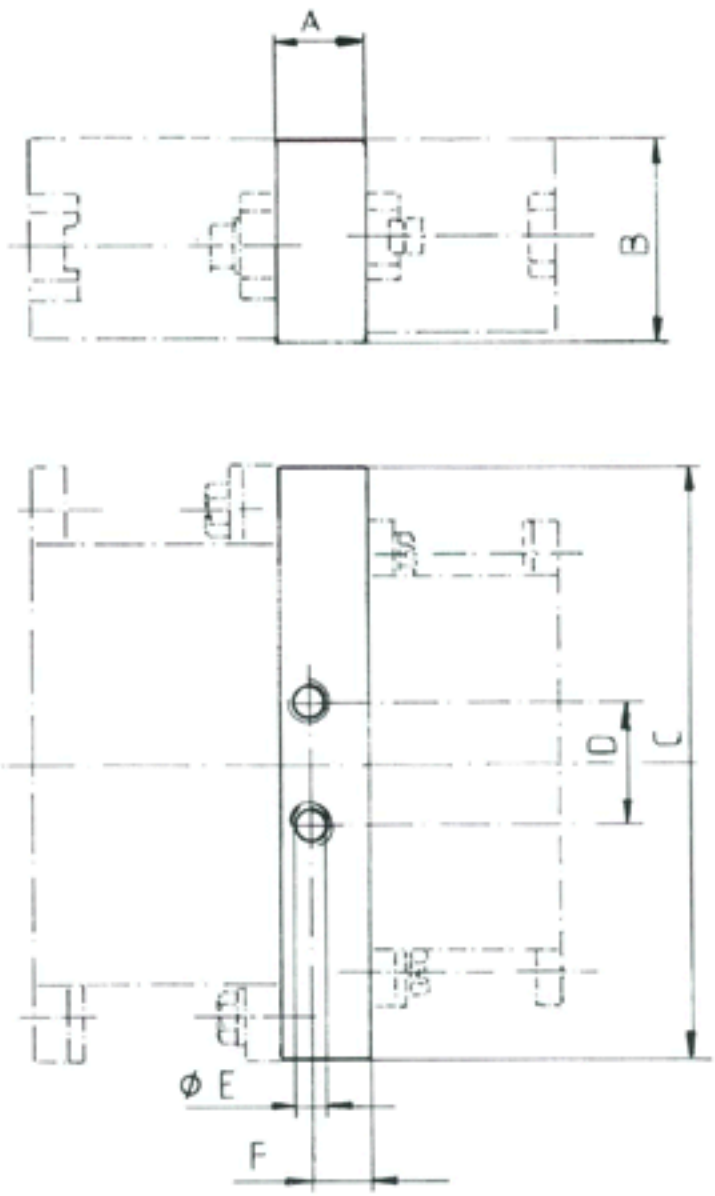
ISO 1 – 3: **Model-No: D357K86**
Weight: 0,8 kg

ISO 2 – 3: **Model-No.: D356K86**
Weight: 0,8 kg

ISO 2 – 4: **Model-No.: D370K86**
Weight: 1,0 kg

ISO 3 – 4: **Model-No: D371K86**
Weight: 1,0 kg





Dimensions - mm

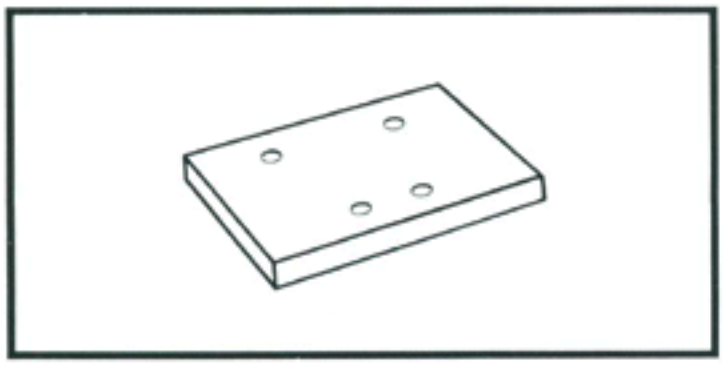
	ISO 1-2	ISO 1-3	ISO 2-3	ISO 2-4	ISO 3-4
A	20	32	32	35	35
B	46	55	55	56	56
C	135	190	190	215	215
D	28	28	35	40	48
E	6,8	7	9	11	11
F	13,2	16,5	23,5	17,5	25

ISO BLANK STATION KITS

ISO 1: **Model-No: 546H77**
Weight: 0,1 kg

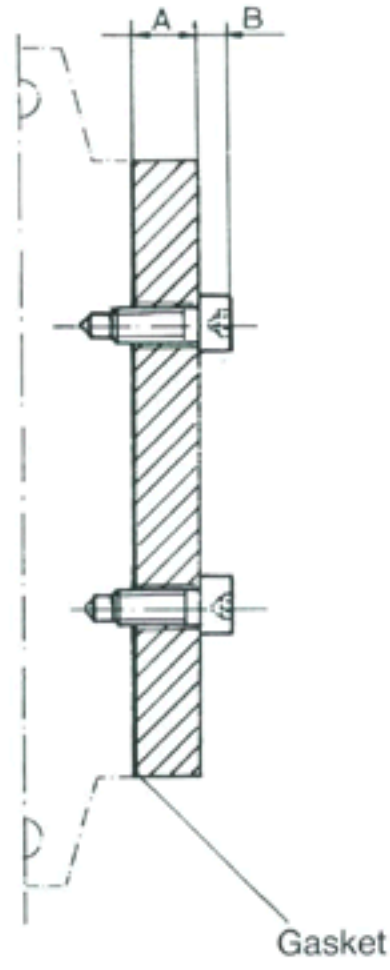
ISO 2: **Model-No: 694K77**
Weight: 0,2 kg

ISO 3: **Model-No: 537H77**
Weight: 0,3 kg



Dimensions - mm

	ISO 1	ISO 2	ISO 3
A	8	8	8
B	5	6	8



ROSS EUROPA GmbH
Robert-Bosch-Straße 2
D-63225 Langen
TEL.: (49) (0)61 03-75 97-0
FAX: (49) (0)61 03-7 46 94

ROSS CONTROLS®
P.O. Box 7015
Troy, Michigan 48007 U.S.A.
TEL.: (1) 248-764-1800
FAX: (1) 248-764-1850
www.rosscontrols.com

ROSS UK Ltd.
St. James Road, Brackley
Northamptonshire
NN 13 7 XY
United Kingdom
TEL.: (+44) (0)1280-706668
FAX: (+44) (0)1280-705630

ROSS ASIA K.K.
10209-5 Tana, Sagamihara-shi
Kanagawa-pref. 229-11, Japan
TEL.: (81) 427-78-7251
FAX: (81) 427-78-7256

WARRANTY

Products manufactured by ROSS are warranted to be free of defects in material and workmanship for a period of one year from the date of purchase. ROSS' obligation under this warranty is limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty shall be void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering. The warranty expressed above is in lieu of and exclusive of all other warranties and ROSS expressly disclaims all other warranties either expressed or implied with respect to merchantability or fitness for a particular purpose. ROSS makes no warranty with respect to its products meeting the provisions of any governmental occupational safety and/or health laws or regulations. In no event shall ROSS be liable to purchaser, user, their employees or others for incidental or consequential damages which may result from a breach of the warranty described above or the use or misuse of the products. No statement of any representative or employee of ROSS shall extend the liability of ROSS as set forth herein.

1M - 06-2000