AIR/OIL MIXING VALVE

CHARACTERISTIC

- TWO SEPARATE INLETS FOR COMPRESSED AIR AND OIL
- USE ANY TYPE OF LUBRICANT WITH ABSOLUTE VISCOSITY BETWEEN 15 AND 1,000 CST AT A FLUID OPERATING TEMPERATURE BETWEEN 0°C AND 80°C.

ADVANTAGES

- MODULAR CONCEPT
- SAVE ON LUBRICANT
- CONTROL FUNCTION

APPLICATIONS

- ROLLING MILLS
- ROLLING MILL BOX GUIDE
- FORMATION OF LOOP
- WINDING MACHINES
- HOLDING SUPPORT EXTENSIONS
- CENTRING TABLES
- ROLLER BEARING
- STRAIGHTENERS
- SIZES
- STRIP MILLS
- STEEL MILLS

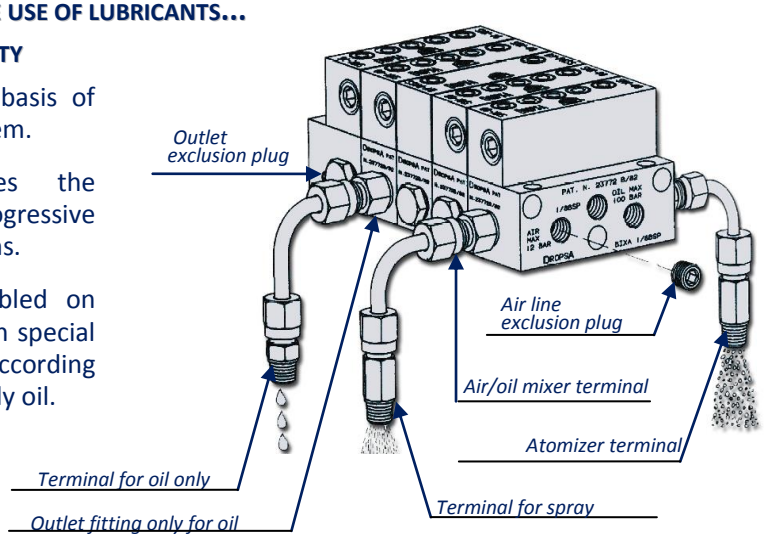
THE SOLUTION FOR REDUCING THE USE OF LUBRICANTS...

THEREBY INCREASING PRODUCTIVITY

The SMX mixing valve is the basis of air/oil progressive modular system.

The air/oil divider applies the characteristics of the SMX progressive modular divider to air/oil systems.

Modular elements are assembled on sub-base that delivers – through special fittings- an air/oil mixture or, according to the requirements at hand, only oil.



OPERATION PRINCIPLES OF THE AIR /OIL SYSTEM

Key elements of the "AIR / OIL" system include:

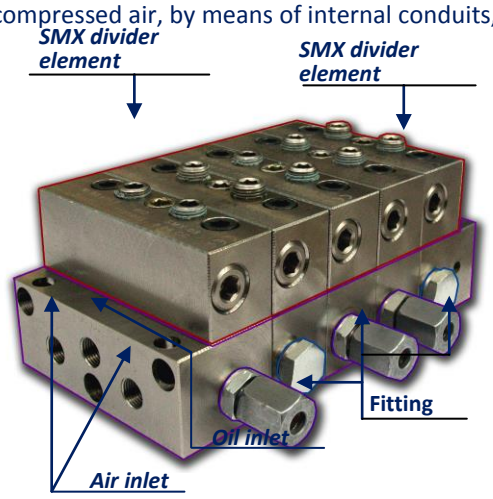
- ***Progressive divider block, SERIAL SMX***
- ***AIR/OIL fittings***

SERIAL SMX

The complete block is composed of three or more ***progressive divider elements*** belonging to the SERIAL SMX modular system and the special ***base***: the Air/Oil mixing valve.

The ***base*** is equipped with two inlets for compressed air and one inlet for oil. Both inlets for compressed air are in communication with the outlets of the base via the internal conduits.

The base is equipped with two separate inlets for compressed air and one inlet for oil. The two inlets for compressed air, by means of internal conduits, are in communication with the outlets of the base.



The inlet for oil, by means of internal conduits, convey the lubricant distributed by the pump to the ***SMX divider elements*** where the right quantity to be sent to the lubrication points through through the outlets of the base are measured.

The special ***AIR/OIL fittings*** are mounted onto these outlets, in which the lubricant is emitted in a continuous current of compressed air that is broken down into little drops distributed on the internal wall of the pipework that connects the base to the lubrification point.

The ***AIR/OIL terminal fittings*** are mounted onto this point

AREAS OF AIR/OIL LUBRICATION APPLICATION

Lubrication of high speed rotating elements, where a steady distribution of small quantities of lubricant is required and is able to maintain, between moving elements, the lubricating film which tends to be carried off by the high centrifuge power.

Lubrication of machinery parts working at high temperatures where the lubricant tends to be dried or burned
spray lubrication of chains or gears

Spray lubrication of chains and gears which require a thin film of lubricant all over their surface

Lubrication of bearings which need protection for dust infiltration, water or other damaging substances. The mixed air flow creates a slight over pressure inside the lubricated element, preventing the ingress of other polluted bodies

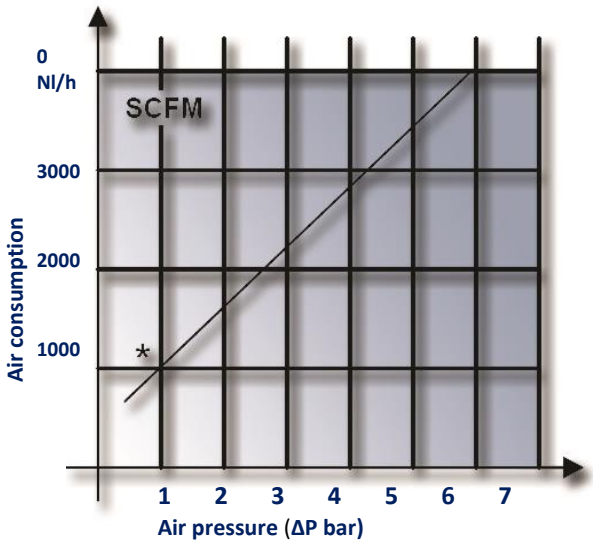
Lubrication of point which cannot be reached by traditional lubrication system, where only an oil spray can solve the problem.

THE ADVANTAGES OF AIR/OIL LUBRICATION

- MODULAR CONCEPT
  The modularity of the SMX progressive dividers allows for extremely easy flexibility in adapting to the lubrication system to suit the need of the design of the system.
- COMPATIBILITY WITH DROPSA PROGRESSIVE SYSTEMS
  The compatibility of the AIR/OIL. block with traditional SMX systems allows one or more AIR/OIL blocks to be inserted into systems that are already in operation: it's only necessary to have a compressed air generator.
- SAVE ON LUBRICANT
  The oil delivered into air stream is accurately metered according to the effective requirement of the lubrication point. This avoids expensive lubricant wastage.
- LUBRICANT VISCOSITY
  It is possible to use any type of lubricant with viscosity between 15 e 1000 cSt at a fluids working temperature between 0°C e 80°C: The best conditions are obtained with oil viscosity between 32 e 320 cSt at a temperature 40°C:
- COOLING OF LUBRICATED PARTS
  The continuous supply of a mixed air stream, besides lubricating, also has a cooling effect.
- RETAINING ACTION
  The over pressure inside the lubricated element prevents the ingress of foreign bodies.
- CONTROL FUNCTION
  Thanks to the progressive system, the malfunctioning of a metering element is signaled by a control device.
- ENVIRONMENT FRIENDLY
  The Air/Oil system does not produce oil mist.

AIR CONSUMPTION

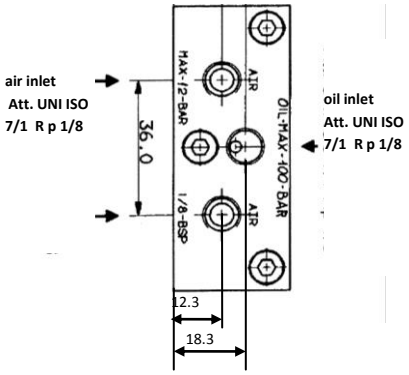
The air consumption in Normal liters/hr. (Nl/hr) is a function of the pressure applied, the diameter of the mixing elements' holes and the number of the same.

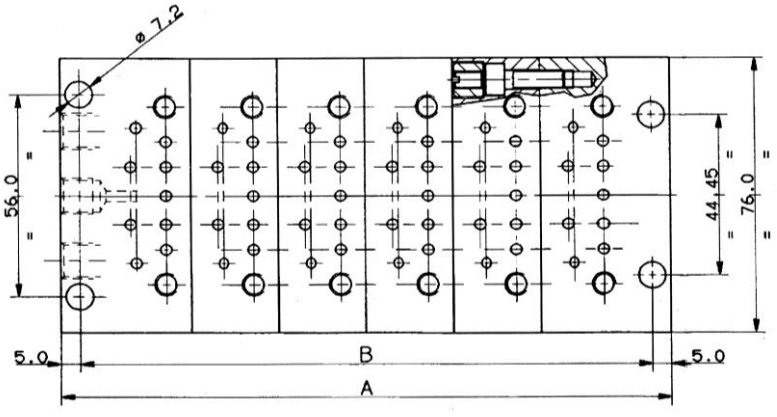


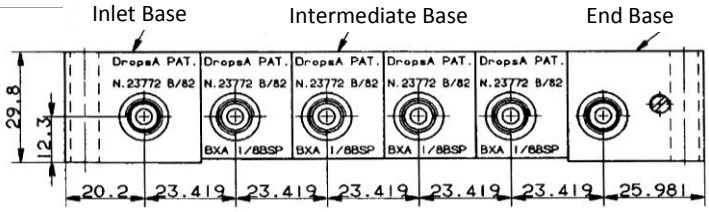
** Hole mixtures Ø 1 mm*

With fitting 649012

DIMENSIONS







NOMINAL DIMENSIONS IN MM TOLLERANCE/ELEMENT + O/- 0,05	
A	B
93.02	83.02
116.44	106.44
139.86	129.86
163.28	153.28
93.02	83.02

An air bleed valve is placed on both sides of the end base to enable air bubbles inside the distributor to be eliminated which can cause inconsistent deliveries.

RACCORDI ARIA/OLIO

There are two types of special AIR/OIL fittings:

- ***fittings to be mounted on base outputs***
- ***terminal fittings to be mounted on lubrication points***

Depending on the connectors mounted you can have following types of lubrication:

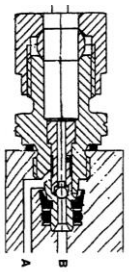
Lubrification with atomised oil (air/oil fine mixture with terminal atomizer)	**Lubrification spray** (air/oil rough mixture type with terminal spray)	**Lubrification with only oil** (with terminal spray)

BASE OUTLET FITTINGS

ATOMISED OIL FITTINGS AND SPRAY OIL FITTINGS

Fittings to be mounted on the base. Oil introduced from the metering chamber of SMX divider, is delivered through passage “A” into the oil fitting where it is brought into the compressed air stream which reaches the same fitting through passage “B”.

- **Part. No. 0649006** for pipe Ø 6.
- **Part. No. 0649029** for pipe Ø 1/4



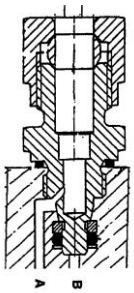
If there was the necessity that the divider works even if there are the exclusion of the outlets, you have to mount the fittings on the base.

- **Part. No. 0649579** for pipe Ø 6.
- **Part. No. 0649580** for pipe Ø 1/4

FITTINGS FOR OIL LUBRICATION

Terminal fitting to be mounted on the base. Air passage "B" is closet, thus the lubrication point will get oil through passage "A" only.

- **Part. No. 0649007** for pipe Ø 6

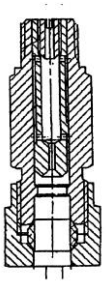


POINT FITTINGS

ATOMISED OIL FITTING

Terminal fitting to be mounted on lubrication point. Inside the fittings there is a small part in which the speed of mixed oil/air stream is increased causing the fragmentation **of course oil particle into very small particles.**

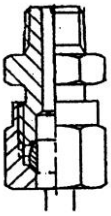
- **Part. No. 0649012** (R 1/8 UNI-ISO 7/1) for pipe Ø 6
- **Part. No. 0649013** (1/8 NPTF) for pipe Ø 6
- **Part. No. 0649032** (1/8 NPTF) for pipe Ø 1/4”



SPRAY OIL FITTING

Terminal fitting to be mounted on lubrication point.
The oil spray is obtained with the fragmentation, inside the fitting, of oil drops delivered by the air.

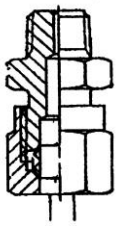
- **Part. No. 0649014** (R 1/8 UNI-ISO 7/1) for pipe Ø 6
- **Part. No. 0649015** (1/8 NPTF) for pipe Ø 6
- **Part. No. 0649033** (1/8 NPTF) for pipe Ø 1/4”.



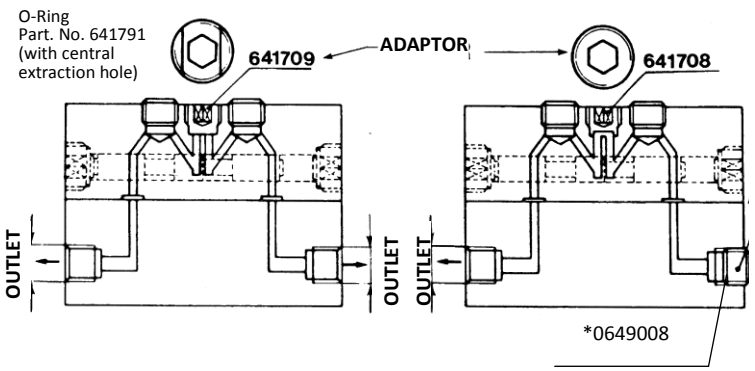
FITTINGS FOR OIL LUBRICATION

Terminal fitting to be mounted on lubrication point

- **Part. No. 0091946** (R 1/8 UNI-ISO 7/1)
- **Part. No. 0091944** (1/8 NPTF)



SINGLE AND DOUBLE OUTLET CONVERSION



* *Order separately*

It's possible to double the delivery of a single element by removing the O-ring **Part. No. 641791** (use the central hole) and by replacing the Yellow Adapter **Part. No. 641709** with the White adapter **Part. No. 641708** as shown in the drawing.
In order to guarantee either a proper seal or easy dismantling of the adaptor. The torque setting should be set 0.8-1 Kg m (8 - 10 Nm).
The torque setting for the plugs that are mounted on the side of the element would be 1 Kg m (10Nm).
The torque setting for the fixing screws to mount the element on the base is 0.5 Kg m (5 Nm).
When the two outlets are connected, remember to close off the one you do not want to use with a plug.

ORDERING INFORMATION

1) Select the part number of base assy. According to the number of metering units to be mounted (see table below)

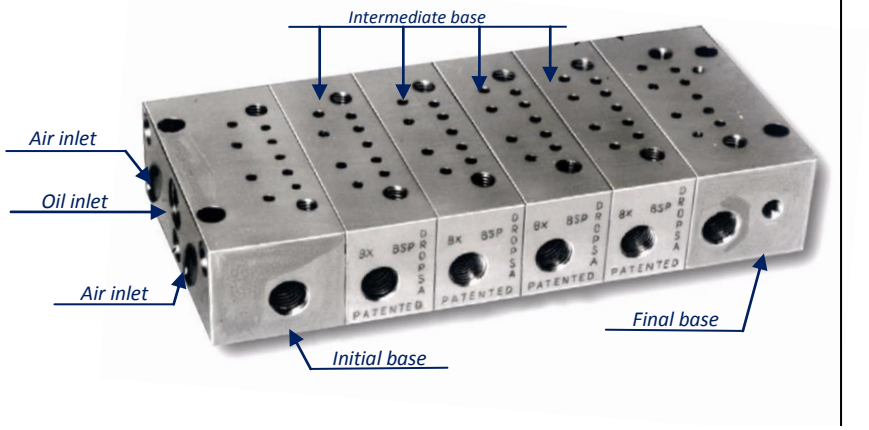
2) Select the part numbers of SMX metering or units or select the delivery and other technical information

3) Select the part number of fittings mounted on lubrication points (see previous page)

4) Select the part number of fittings mounted on lubrication points (see previous page)

Note: To connect base fitting and terminal fittings, a pipe with an external diameter of 6 mm must be used.

AIR/ OIL BAS ASSEMBLY READY FOR SIX DIVIDER ELEMENTS



COMPONENT PART NUMBERS			
DESCRIPTION	PART. NO.		MARK
	R1/8 UNI-ISO 7/1	(NPTF)	
Final Base	**0649055**	**0649055**	BFXA
Intermediate base	**0649054**	**0649054**	BXA
Initial base	**0649053**	**0649023**	BIXA
Outlet exclusion plug	**0649008**	**0649008**	
Oil outlet fitting	**0649007**	**0649007**	
Air/Oil fitting	**0649006**	**0649006**	
Air line exclusion plug	**3232098**	**3232095**	
Fitting for oil only	**0091946**	**0091944**	
Atomiser fitting	**0649012**	**0649013**	
Fitting for sprayy	**0649014**	**0649015**	

BASE ASSEMBLY PART NUMBERS		
NUMBER OF DIVIDER E LEMENTS	BASE ASSY. R1/8 UNI-ISO 7/1	BASE ASSY. NPTF
3	**0649153**	**0649173**
4	**0649154**	**0649174**
5	**0649155**	**0649175**
6	**0649156**	**0649176**
7	**0649157**	**0649177**
8	**0649158**	**0649178**
9	**0649159**	**0649179**
10	**0649160**	**0649180**
11	**0649161**	**0649181**
12	**0649162**	**0649182**

The base assembly is made of one inlet base, one or more intermediate bases one end base.

DIVIDER PART NUMBERS									
SMX DIVIDER ELEMENT				SMX BRIDGE ELEMENT					
Delivery Per Outlet		1 o 2 Outlets		Left		Left-Right		Right	
cm³	cu. in.	Description	Cod.	Description	Cod.	Description	Cod.	Description	Cod.
0.04	.0024	SMX 04	**0641825**	SMX 04L	**0641826**	SMX 04LR	**0641827**	SMX 04R	**0641828**
0.08	.005	SMX 08	**0641516**	SMX 08L	**0641629**	SMX 08LR	**0641637**	SMX 08R	**0641621**
0.16	.010	SMX 16	**0641517**	SMX 16L	**0641630**	SMX 16LR	**0641638**	SMX 16R	**0641622**
0.25	.015	SMX 25	**0641518**	SMX 25L	**0641631**	SMX 25LR	**0641639**	SMX 25R	**0641623**
0.35	.021	SMX 35	**0641519**	SMX 35L	**0641632**	SMX 35LR	**0641640**	SMX 35R	**0641624**
0.40	.025	SMX 40	**0641520**	SMX 40L	**0641633**	SMX 40LR	**0641641**	SMX 40R	**0641625**
0.50	.030	SMX 50	**0641521**	SMX 50L	**0641634**	SMX 50LR	**0641642**	SMX 50R	**0641626**
0.60	.036	SMX 60	**0641522**	SMX 60L	**0641635**	SMX 60LR	**0641643**	SMX 60R	**0641627**
0.65	.040	SMX 65	**0641523**	SMX 65L	**0641636**	SMX 65LR	**0641644**	SMX 65R	**0641628**

OPTIONAL	
DESCRIPTION	PART NUMBER
Ultrasensor – Sensor for SMX	**1655305**

Distributor info: