



CATÁLOGO DE ACTUADOR





DISEÑO Y CONSTRUCCIÓN

1. Diseño compacto que utiliza cuerpos y tapas iguales para ambos modelos de doble acción y de retorno por resorte. Esta característica reduce el inventario y permite la modificación en campo, agregando o eliminando cartuchos modulares de resortes.

2. De total cumplimiento con las especificaciones más recientes: ISO 5211, DIN 3337 y VDI/ VDE 3845 para intercambiabilidad de productos y montaje fácil de solenoides, cajas límites de límite y otros accesorios.

3. Diseño de pistón, cremallera y piñón para una construcción compacta, posición de montaje simétrica, vida útil de gran número de ciclos y rápida operación. Se puede lograr rotación inversa en el campo con sólo invertir los pistones.

4. Dos paradas de desplazamiento ajustables permiten un ajuste fácil y preciso de $\pm 5^\circ$ en ambas direcciones. Este ajuste puede realizarse en la posición abierta o cerrada y proporciona una alineación precisa de la válvula.

5. Múltiples rodamientos y guías en pistones y cremalleras para una operación precisa, baja fricción, vida útil de alto número de ciclos y un eje de piñón inextinguible.

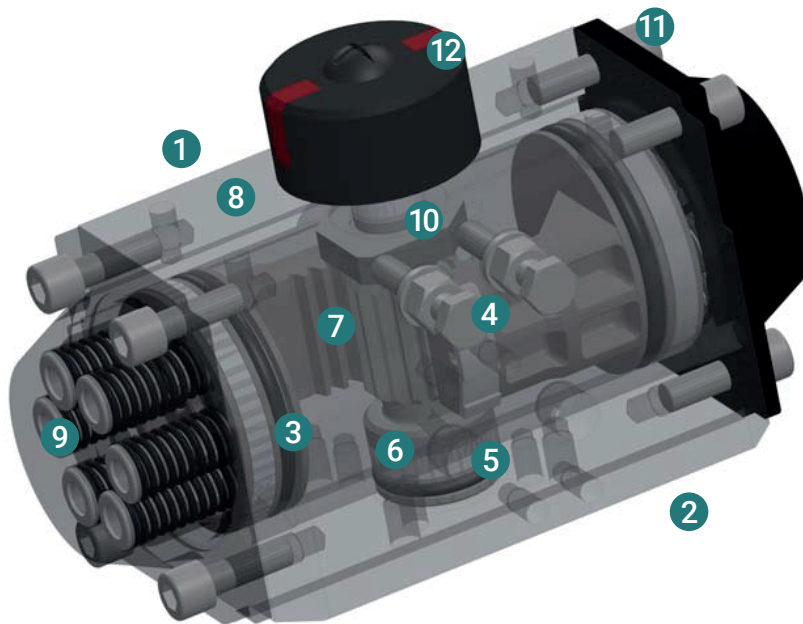
7. Dientes de alta precisión en las cremalleras de los pistones y el eje del piñón para un posicionamiento preciso, bajo juego y un acoplamiento máximo que da como resultado un funcionamiento eficiente en general.

9. Cartuchos modulares de resortes precargados diseñados con resortes revestidos para mayor versatilidad de rango, mayor seguridad y resistencia a la corrosión.

10. Rodamientos y sellos seleccionados de alta calidad que proporcionan un amplio rango de temperaturas de funcionamiento, baja fricción y vida útil de alto número de ciclos.

11. Elementos de fijación internos y externos de acero inoxidable para resistencia a la corrosión a largo plazo.

12. Indicador de posición multifuncional para indicación visual de la posición, y una forma directa, fácil y económica de colocar sensores comunes.



6. Eje de piñón niquelado, de una sola pieza, guiado e inextinguible para mayor seguridad y máxima vida útil.

8. Cuerpo de aluminio extruido con protecciones anticorrosivas internas y externas, y una superficie cilíndrica perfeccionada para una vida útil más larga y un menor coeficiente de fricción.

1. Para el modelo 32-160

(1) Temperatura ambiente | (2) Desplazamiento del actuador 90° | (3) Válvula solenoide con orificio de 4 mm y capacidad de flujo $Q_n 400L / min$ | (3) diámetro interno de la tubería 6 mm | (5) Medio aire limpio | (6) Presión de suministro de aire 5.5 bar | (7) Actuador sin carga de resistencia externa

2. Para el modelo 190-400

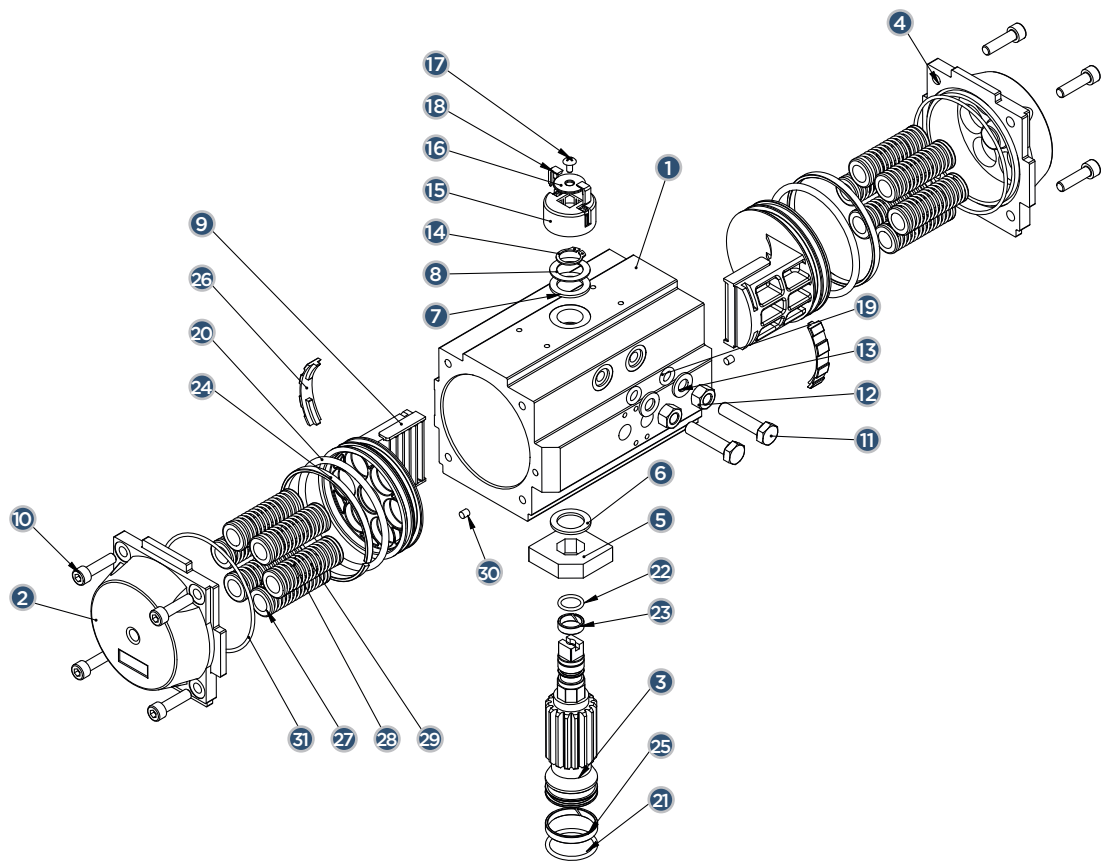
(1) Temperatura ambiente | (2) Desplazamiento del actuador 90° | (3) Válvula solenoide con orificio de 12 mm y capacidad de flujo $Q_n 5100L / min$ | (4) Diámetro interno de la tubería 8 mm | (5) Medio aire limpio | (6) Presión de suministro de aire 5.5 bar | (7) Actuador sin carga de resistencia externa

Precauciones: obviamente en las aplicaciones de campo cuando uno o más de los parámetros anteriores son diferentes, el tiempo de movimiento será diferente. El consumo de aire se basa en el suministro de aire, el volumen de aire y los tiempos del ciclo de acción.

Expresiones: $L/min = \text{Volumen de aire} (\text{volumen de aire de apertura} + \text{volumen de aire de cierre}) \times [\text{Suministro de aire (Kpa)} + 101.3] \times \text{Tiempo de acción (min)} \times 101.3$



PARTES Y MATERIALES

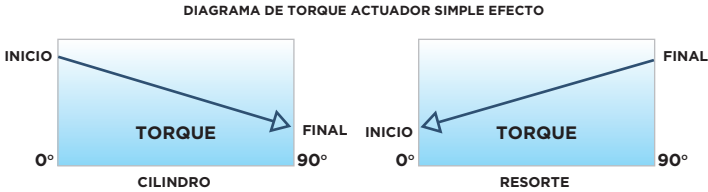
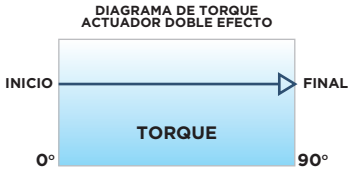


ÍTEMS	DESCRIPCIÓN DE PARTES	CALIDAD DE MATERIAL	QTY	ÍTEMS	DESCRIPCIÓN DE PARTES	CALIDAD DEL MATERIAL	CANT.	ÍTEMS	DESCRIPCIÓN DE PARTES	CALIDAD DE MATERIAL	CANT.
1	Cuerpo	Aleación de aluminio	1	12	Tuerca (tornillo de tope)	Acero inoxidable	2	23	Rodamiento (Tope del piñón)	POM+PTFE	1
2	Tapa izquierda	Aleación de aluminio	1	13	Arandela (tornillo de tope)	Acero inoxidable	2	24	Rodamiento (cabeza del piñón)	POM+PTFE	2
3	Eje de accionamiento	Aleación de acero	1	14	Anillo elástico	Acero	1	25	Rodamiento (parte inferior del piñón)	POM+PTFE	1
4	Tapa derecha	Aleación de aluminio	1	15	Indicador de Posición	Nylon	1	26	Banda de desgaste	Nylon	2
5	OCTI-CAM	Aleación de acero	1	16	Rodamiento de empuje del indicador	Acero inoxidable	1	27	Asiento de resorte	Nylon	24
6	Rodamiento de empuje (parte superior del piñón)	POM+PTFE	1	17	Tornillo cabeza plana	Acero inoxidable	1	28	Resorte	Acero inoxidable	12
7	Rodamiento de empuje	POM+PTFE	1	18	Código de color	Nylon	2	29	Tubo guía	Tubo de cobre	12
8	Arandela separador	Acero inoxidable	1	19	" o " ring (tornillo de tope)	NBR	2	30	Tapón	NBR	2
9	Pistón	Aleación de aluminio	2	20	" o " ring (pistón)	NBR	2	31	" o " ring (tapa)	NBR	2
10	Tornillo de tapa (extremo)	Acero inoxidable	8	21	" o " ring (parte inferior del piñón)	NBR	1				
11	Tornillo de tope	Acero inoxidable	2	22	" o " ring (tope del piñón)	NBR	1				

DATOS TÉCNICOS (MÉTRICA)

MODELO/TIPO	IN032		IN050		IN065		IN075		IN085		IN095		IN110		IN125		IN140		IN160		IN190		IN210		IN240		IN270		IN300		IN350		IN400	
	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Diámetro (mm)	32		50		65		75		85		95		110		125		140		160		190		210		240		270		300		350		400	
Volumen de aire en la apertura (L)	0.03		0.09		0.19		0.30		0.44		0.88		0.83		1.41		1.76		2.85		4.75		6.60		11.40		15.80		19.09		27.65		42.81	
Volumen de aire en el cierre (L)	0.04		0.15		0.32		0.50		0.66		1.17		1.27		2.13		2.72		4.08		7.20		10.29		15.10		18.80		28.23		44.10		62.05	
Tiempo de apertura (sec)	0.3		0.3	0.9	0.4	0.9	0.4	0.9	0.9	1.0	0.9	1.4	0.9	1.4	1.3	2.4	1.3	2.8	2.0	4.8	2.2	2.4	2.9	3.4	3.2	3.8	4.4	5.0	5.0	6.0	6.2	7.4	7.5	9.6
Tiempo de cierre(seg)	0.4		0.4	0.7	0.4	0.8	0.4	0.9	0.9	1.2	1.0	1.4	1.0	1.4	1.4	2.4	1.4	3.0	2.4	4.9	2.6	3.0	3.8	4.1	3.7	4.0	4.9	5.5	6.0	6.8	7.2	8.4	8.5	10.6
Pesos (Kg)	0.47	0.59	1.13	1.25	1.97	2.21	2.93	3.29	3.78	4.26	5.14	5.86	6.09	7.17	10.86	12.54	13.77	15.93	20.15	23.75	28.41	33.81	40.03	48.43	52.6	77.76	73.64	90.6	108	135.6	146.7	188.1	220.5	283.5

TABLA DE TORQUES



TORQUE ACTUADOR: DOBLE EFECTO Nm

MODELO	PRESIÓN DE SUMINISTROS (BAR)									
	2.5	3	3.5	4	4.5	5	5.5	6	7	8
IN032	2.9	3.4	4.0	4.6	5.3	5.9	6.5	7.1	8.3	9.5
IN050	8.6	10.4	12.3	14.2	16.0	17.9	19.8	21.6	25.4	29.1
IN065	17.4	21.2	25.0	28.7	32.5	36.3	40.1	43.9	51.4	59.0
IN075	27.0	32.9	38.8	44.7	50.5	56.4	62.3	68.2	79.9	91.7
IN085	39.7	48.3	56.9	65.6	74.2	82.8	91.4	100.1	117.3	134.6
IN095	55.7	67.9	80.0	92.1	104.2	116.4	128.5	140.6	164.8	189.1
IN110	72.0	89.3	105.0	120.6	136.3	152.0	167.6	183.3	214.6	245.9
IN125	128.7	159.5	187.5	215.4	243.4	271.4	299.4	327.4	383.3	439.3
IN140	196	237	278	319	360	401	442	483	565	647
IN160	263.5	326.6	383.9	441.2	498.5	555.8	613.1	670.4	785.0	899.7
IN190	428.5	518.0	607.3	696.6	785.9	875.3	964.6	1053.9	1232.5	1411.1
IN210	598.2	723.2	847.9	972.6	1097.3	1222.0	1346.6	1471.3	1720.7	1970.1
IN240	928.3	1122.0	1315.0	1508.0	1702.0	1895.0	2089.0	2282.0	2669.0	3056.0
IN270	1305.0	1577.0	1849.0	2121.0	2393.0	2665.0	2937.0	3209.0	3753.0	4297.0
IN300	1678.6	2029.4	2379.3	2729.2	3079.1	3429.0	3778.9	4128.8	4828.5	5528.3
IN350	2492.5	3011.8	3531.1	4050.4	4569.6	5088.9	5608.2	6127.5	7166.0	8204.6
IN400	3798.1	4589.4	5380.7	6172.0	6963.3	7754.5	8545.8	9337.1	10919.7	12502.2

TORQUE ACTUADOR: SIMPLE EFECTO Nm

MODELO	PRESIÓN DE SUMINISTROS (BAR)																				DESPLAZAMIENTO DEL RESORTE	
	2.5		3		3.5		4		4.5		5		5.5		6		7		8			
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
IN050 S05	5.1	3.4	6.9	5.3	8.8	7.2	10.7	9.0	12.5	10.9	14.4	12.8	16.3	14.6	18.1	16.5	21.9	20.2	25.6	23.9	5.2	3.5
IN050 S06	4.4	2.4	6.2	4.3	8.1	6.1	10.0	8.0	11.8	9.9	13.7	11.7	15.6	13.6	17.4	15.5	21.2	19.2	24.9	22.9	6.2	4.2
IN050 S07			5.5	3.2	7.4	5.1	9.3	7.0	11.1	8.8	13.0	10.7	14.9	12.6	16.7	14.4	20.5	18.2	24.2	21.9	7.2	4.9
IN050 S08					6.7	4.1	8.6	5.9	10.4	7.8	12.3	9.7	14.2	11.5	16.0	13.4	19.8	17.1	23.5	20.9	8.2	5.6
IN050 S09							7.9	4.9	9.7	6.8	11.6	8.6	13.5	10.5	15.3	12.4	19.1	16.1	22.8	19.8	9.3	6.3
IN050 S10									9.0	5.7	10.9	7.6	12.8	9.5	14.6	11.3	18.4	15.1	22.1	18.8	10.3	7.0
IN050 S11											10.2	6.6	12.1	8.4	13.9	10.3	17.7	14.0	21.4	17.8	11.3	7.7
IN050 S12													11.4	7.4	13.2	9.3	17.0	13.0	20.7	16.7	12.4	8.4
IN065 S05	8.7	4.3	12.5	8.1	16.3	11.9	20.0	15.6	23.8	19.4	27.6	23.2	31.4	27.0	35.2	30.8	42.7	38.3	50.3	45.9	13.1	8.7
IN065 S06	7.0	1.7	10.7	5.5	14.5	9.2	18.3	13.0	22.1	16.8	25.9	20.6	29.7	24.4	33.4	28.2	41.0	35.7	48.6	43.3	15.7	10.4
IN065 S07			9.0	2.8	12.8	6.6	16.6	10.4	20.4	14.2	24.1	18.0	27.9	21.8	31.7	25.5	39.3	33.1	46.8	40.7	18.3	12.2
IN065 S08					11.0	4.0	14.8	7.8	18.6	11.6	22.4	15.4	26.2	19.1	30.0	22.9	37.5	30.5	45.1	38.1	21.0	13.9
IN065 S09							13.1	5.2	16.9	9.0	20.7	12.7	24.4	16.5	28.2	20.3	35.8	27.9	43.4	35.4	23.6	15.7
IN065 S10									15.1	6.3	18.9	10.1	22.7	13.9	26.5	17.7	34.0	25.2	41.6	32.8	26.2	17.4
IN065 S11											17.2	7.5	21.0	11.3	24.7	15.1	32.3	22.6	39.9	30.2	28.8	19.1
IN065 S12													19.2	8.7	23.0	12.4	30.6	20.0	38.1	27.6	31.4	20.9
IN075 S05	16.3	10.2	22.2	16.0	28.1	21.9	34.0	27.8	39.8	33.7	45.7	39.6	51.6	45.4	57.5	51.3	69.2	63.1	81.0	74.8	16.9	10.7
IN075 S06	14.2	6.8	20.1	12.7	25.9	18.6	31.8	24.4	37.7	30.3	43.6	36.2	49.4	42.1	55.3	47.9	67.1	59.7	78.8	71.4	20.2	12.8
IN075 S07			17.9	9.3	23.8	15.2	29.7	21.1	35.6	26.9	41.4	32.8	47.3	38.7	53.2	44.6	64.9	56.3	76.7	68.1	23.6	15.0
IN075 S08					21.7	11.8	27.5	17.7	33.4	23.6	39.3	29.4	45.2	35.3	51.0	41.2	62.8	53.0	74.5	64.7	27.0	17.1
IN075 S09							25.4	14.3	31.3	20.2	37.1	26.1	43.0	32.0	48.9	37.8	60.7	49.6	72.4	61.3	30.3	19.3
IN075 S10									29.1	16.8	35.0	22.7	40.9	28.6	46.8	34.5	58.5	46.2	70.3	58.0	33.7	21.4
IN075 S11											32.9	19.3	38.7	25.2	44.6	31.1	56.4	42.8	68.1	54.6	37.1	23.5
IN075 S12													36.6	21.8	42.5	27.7	54.2	39.5	66.0	51.2	40.4	25.7
IN085 S05	23.2	13.7	31.8	22.3	40.4	30.9	49.0	39.5	57.6	48.1	66.3	56.8	74.9	65.4	83.5	74.0	100.8	91.3	118.0	108.5	26.1	16.6
IN085 S06	19.8	8.4	28.4	17.0	37.1	25.7	45.7	34.3	54.3	42.9	62.9	51.5	71.6	60.2	80.2	68.8	97.4	86.0	114.7	103.3	31.3	19.9
IN085 S07			25.1	11.8	33.8	20.5	42.4	29.1	51.0	37.7	59.6	46.3	68.3	55.0	76.9	63.6	94.1	80.8	111.4	98.1	36.5	23.2
IN085 S08					30.4	15.2	39.1	23.9	47.7	32.5	56.3	41.1	64.9	49.7	73.6	58.4	90.8	75.6	108.1	92.9	41.7	26.5
IN085 S09							35.8	18.7	44.4	27.3	53.0	35.9	61.6	44.5	70.3	53.2	87.5	70.4	104.8	87.7	46.9	29.8
IN085 S10									41.1	22.1	49.7	30.7	58.3	39.3	67.0	48.0	84.2	65.2	101.5	82.5	52.1	33.1
IN085 S11											46.4	25.5	55.0	34.1	63.6	42.7	80.9	60.0	98.1	77.2	57.3	36.4
IN085 S12													51.7	28.9	60.3	37.5	77.6	54.8	94.8	72.0	62.5	39.7
IN095 S05	33.6	20.9	45.8	33.0	57.9	45.1	70.0	57.3	82.1	69.4	94.3	81.5	106.4	93.6	118.5	105.8	142.7	130.0	167.0	154.2	34.9	22.1
IN095 S06	29.2	13.9	41.4	26.1	53.5	38.2	65.6	50.3	77.7	62.4	89.8	74.5	102.0	86.7	114.1	98.8	138.3	123.0	162.6	147.3	41.8	26.5
IN095 S07			36.9	19.1	49.1	31.2	61.2	43.3	73.3	55.4	85.4	67.6	97.5	79.7	109.7	91.8	133.9	116.1	158.1	140.3	48.8	30.9
IN095 S08					44.6	24.2	56.8	36.4	68.9	48.5	81.0	60.6	93.1	72.7	105.2	84.8	129.5	109.1	153.7	133.3	55.8	35.4
IN095 S09							52.3	29.4	64.5	41.5	76.6	53.6	88.7	65.8	100.8	77.9	125.1	102.1	149.3	126.4	62.7	39.8
IN095 S10									60.0	34.5	72.2	46.7	84.3	58.8	96.4	70.9	120.6	95.1	144.9	119.4	69.7	44.2
IN095 S11											67.7	39.7	79.9	51.8	92.0	63.9	116.2	88.2	140.5	112.4	76.7	48.6
IN095 S12													75.4	44.8	87.6	57.0	111.8	81.2	136.0	105.4	83.6	53.0
IN110 S05	43.4	26.2	60.7	43.4	76.4	59.1	92.0	74.8	107.7	90.4	123.4	106.1	139.0	121.8	154.7	137.4	186.0	168.8	217.3	200.1	45.9	28.6
IN110 S06	37.7	17.0	55.0	34.3	70.6	49.9	86.3	65.6	102.0	81.3	117.6	96.9	133.3	112.6	149.0	128.3	180.3	159.6	211.6	190.9	55.0	34.3
IN110 S07			49.3	25.1	64.9	40.8	80.6	56.4	96.2	72.1	111.9	87.8	127.6	103.4	143.2	119.1	174.6	150.4	205.9	181.8	64.2	40.0
IN110 S08					59.2	31.6	74.9	47.3	90.5	62.9	106.2	78.6	121.9	94.3	137.5	109.9	168.9	141.3	200.2	172.6	73.4	45.8
IN110 S09							69.1	38.1	84.8	53.8	100.5	69.4	116.1	85.1	131.8	100.8	163.1	132.1	194.5	163.4	82.5	51.5
IN110 S10									79.1	44.6	94.8	60.3	110.4	75.9	126.1	91.6	157.4	122.9	188.7	154.2	91.7	57.2
IN110 S11											89.0	51.1	104.7	66.7	120.4	82.4	151.7	113.7	183.0	145.1	100.9	62.9
IN110 S12													99.0	57.6	114.6	73.2	146.0	104.6	177.3	135.9	110.0	68.6



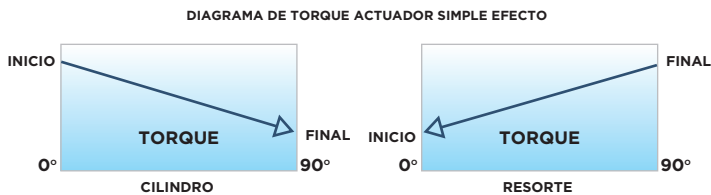
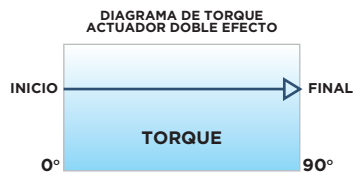
TABLA DE TORQUES

TORQUE ACTUADOR: SIMPLE EFECTO Nm

MODELO	PRESIÓN DE SUMINISTROS (BAR)																				DESPLAZAMIENTO DEL RESORTE	
	2.5		3		3.5		4		4.5		5		5.5		6		7		8			
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
IN125 S05	77.7	48.2	108.5	78.9	136.5	106.9	164.4	134.9	192.4	162.9	220.4	190.9	248.4	218.8	218.8	276.4	246.8	302.8	388.3	358.7	80.6	51.0
IN125 S06	67.5	32.0	98.3	62.8	126.3	90.8	154.2	118.8	182.2	146.8	210.2	174.7	238.2	202.7	202.7	266.2	230.7	286.7	378.1	342.6	96.7	61.2
IN125 S07			88.1	46.7	116.1	74.7	144.0	102.7	172.0	130.7	200.0	158.6	228.0	186.6	186.6	256.0	214.6	270.6	367.9	326.5	112.8	71.4
IN125 S08					105.9	58.6	133.8	86.6	161.8	114.5	189.8	142.5	217.8	170.5	170.5	245.8	198.5	254.4	357.7	310.4	128.9	81.6
IN125 S09							123.6	70.5	151.6	98.4	179.6	126.4	207.6	154.4	154.4	235.6	182.4	238.3	347.5	294.3	145.0	91.8
IN125 S10									141.4	82.3	169.4	110.3	197.4	138.3	138.3	225.4	166.3	222.2	337.3	278.2	161.1	102.0
IN125 S11											159.2	94.2	187.2	122.2	122.2	215.2	150.2	206.1	327.1	262.1	177.2	112.2
IN125 S12													177.0	106.1	106.1	205.0	134.0	190.0	316.9	246.0	193.3	122.4
IN140 S05	114.2	74.1	155.1	115	196.1	156	237.0	196.9	277.9	237.8	318.8	278.7									122.4	82.3
IN140 S06	97.7	49.6	138.7	90.6	179.6	131.5	220.5	172.4	261.5	213.3	302.4	254.3	343.3	295.2	295.2						146.8	98.7
IN140 S07			122.2	66.1	163.2	107.0	204.1	147.9	245.0	188.9	285.9	229.8	326.9	270.7	270.7	367.8	311.6				171.3	115.2
IN140 S08					146.7	82.5	187.6	123.5	228.6	164.4	269.5	205.3	310.4	246.2	246.2	351.3	287.2	369.0			195.8	131.6
IN140 S09							171.2	99.0	212.1	139.9	253.0	180.9	294.0	221.8	221.8	334.9	262.7	344.6	498.6	426.4	220.2	148.1
IN140 S10									195.7	115.5	236.6	156.4	277.5	197.3	197.3	318.4	238.2	320.1	482.1	401.9	244.7	164.5
IN140 S11											220.1	131.9	261.1	172.8	172.8	302.0	213.8	295.6	465.7	377.5	269.2	181.0
IN140 S12													244.6	148.4	148.4	285.5	189.3	271.1	449.2	353.0	293.6	197.4
IN160 S05	153.5	101.3	216.6	164.4	273.9	221.7	331.2	279.0	388.5	336.3	445.8	393.6	503.1	450.9	450.9	560.4	508.2	622.8	789.7	737.4	162.3	110.0
IN160 S06	131.5	68.8	194.6	131.9	251.9	189.2	309.2	246.5	366.5	303.8	423.8	361.1	481.1	418.4	418.4	538.4	475.7	590.3	767.7	705.0	194.7	132.0
IN160 S07			172.6	99.5	229.9	156.8	287.2	214.1	344.5	271.4	401.8	328.7	459.1	386.0	386.0	516.4	443.3	557.9	745.7	672.5	227.2	154.0
IN160 S08					207.9	124.3	265.2	181.6	322.5	238.9	379.8	296.2	437.1	353.5	353.5	494.4	410.8	525.4	723.7	640.1	259.6	176.0
IN160 S09							243.2	149.2	300.5	206.5	357.8	263.8	415.1	321.1	321.1	472.4	378.4	493.0	701.7	607.6	292.1	198.0
IN160 S10									278.5	174.0	335.8	231.3	393.1	288.6	288.6	450.4	345.9	460.5	679.7	575.2	324.5	220.0
IN160 S11											313.8	198.9	371.1	256.2	256.2	428.4	313.5	428.1	657.7	542.7	357.0	242.0
IN160 S12													349.1	223.7	223.7	406.4	281.0	395.6	635.7	510.3	389.4	264.0
IN190 S05	246.8	167.4	336.3	256.9	425.6	346.2	514.9	435.5	604.2	524.8	693.5	614.1									261.2	181.8
IN190 S06	210.4	115.1	299.9	204.6	389.2	293.9	478.5	383.3	567.8	472.6	657.2	561.9	746.5	651.2	651.2						313.4	218.1
IN190 S07			263.6	152.4	352.9	241.7	442.2	331.0	531.5	420.3	620.8	509.6	710.1	599.0	599.0	799.4	688.3				365.6	254.5
IN190 S08					316.5	189.5	405.8	278.7	495.1	368.1	584.5	457.4	673.8	546.7	546.7	779.5	636.0	814.7			417.8	290.8
IN190 S09							369.5	226.6	458.8	315.9	548.1	405.2	637.4	494.5	494.5	745.2	583.8	762.4	1084.0	941.1	470.1	327.2
IN190 S10									422.4	263.6	511.8	353.0	601.1	442.3	442.3	710.9	531.6	710.2	1047.6	888.8	522.3	363.5
IN190 S11											475.4	300.7	564.7	390.0	390.0	676.6	479.3	658.0	1011.3	836.6	574.5	399.9
IN190 S12													528.4	337.8	337.8	642.3	427.1	605.7	974.9	784.4	628.8	436.8
IN210 S05	352.8	239.1	477.8	364.1	602.5	488.8	727.2	613.5	851.9	738.2	976.6	862.9	1101.2	987.5	987.5	1225.9	1112.2	1361.6	1724.7	1611.0	359.1	245.4
IN210 S06	303.7	167.3	428.7	292.3	553.4	417.0	678.1	541.7	802.8	666.4	927.5	791.0	1052.2	915.7	915.7	1176.9	1040.4	1289.8	1675.6	1539.2	430.9	294.5
IN210 S07			379.6	220.5	504.3	345.2	629.0	469.8	753.7	594.5	878.4	719.2	1003.1	843.9	843.9	1127.8	968.6	1218.0	1626.5	1467.4	502.7	343.6
IN210 S08					455.3	273.3	579.9	398.0	704.6	522.7	829.3	647.4	954.0	772.1	772.1	1078.7	896.8	1146.2	1577.5	1395.5	574.6	392.6
IN210 S09							530.9	326.2	655.6	450.9	780.2	575.6	904.9	700.3	700.3	1029.6	825.0	1074.3	1528.4	1323.7	646.4	441.7
IN210 S10									606.5	379.1	731.2	503.8	855.8	628.4	628.4	980.5	753.1	1002.5	1479.3	1251.9	718.2	490.8
IN210 S11											682.1	431.9	806.8	556.6	556.6	931.5	681.3	930.7	1430.2	1180.1	790.0	539.9
IN210 S12													757.7	484.8	484.8	882.4	609.5	858.9	1381.1	1108.3	861.8	589.0
IN240 S05	517.8	374.3	711.2	567.7	904.6	761.1	1098.0	954.5	1291.4	1147.9	1484.8	1341.3									554.0	410.5
IN240 S06	435.7	263.5	629.1	456.9	822.5	650.3	1015.9	843.7	1209.3	1037.1	1402.7	1230.5	1596.1	1423.9	1423.9						664.8	492.6
IN240 S07			547.0	346.1	740.4	539.5	933.8	732.9	1127.2	926.3	1320.6	1119.7	1514.0	1313.1	1313.1	1707.4	1506.5				775.6	574.7
IN240 S08					658.3	428.7	851.7	622.1	1045.1	815.5	1238.5	1008.9	1431.9	1202.3	1202.3	1625.3	1395.7	1782.5			886.4	656.8
IN240 S09							769.6	511.3	963.0	704.7	1156.4	898.1	1349.8	1091.5	1091.5	1543.2	1284.9	1671.7	2316.8	2058.5	997.2	738.9
IN240 S10									880.9	593.9	1074.3	787.3	1267.7	980.7	980.7	1461.1	1174.1	1560.9	2234.7	1947.7	1108.0	821.0
IN240 S11											992.2	676.5	1185.6	869.9	869.9	1379.0	1063.3	1450.1	2152.6	1836.9	1218.8	903.1
IN240 S12													1103.5	759.1	759.1	1296.9	952.5	1339.3	2070.5	1726.1	1329.6	985.2
IN270 S05	745.9	519.4	1017.9	791.4	1289.9	1063.4	1561.8	1335.3	1833.8	1607.3	2105.7	1879.2										



TABLA DE TORQUES



TORQUE ACTUADOR: DOBLE EFECTO Nm

MODELO	PRESIÓN DE SUMINISTROS (BAR)									
	2.5	3	3.5	4	4.5	5	5.5	6	7	8
IN032	2.9	3.4	4.0	4.6	5.3	5.9	6.5	7.1	8.3	9.5
IN050	8.6	10.4	12.3	14.2	16.0	17.9	19.8	21.6	25.4	29.1
IN065	17.4	21.2	25.0	28.7	32.5	36.3	40.1	43.9	51.4	59.0
IN075	27.0	32.9	38.8	44.7	50.5	56.4	62.3	68.2	79.9	91.7
IN085	39.7	48.3	56.9	65.6	74.2	82.8	91.4	100.1	117.3	134.6
IN095	55.7	67.9	80.0	92.1	104.2	116.4	128.5	140.6	164.8	189.1
IN110	72.0	89.3	105.0	120.6	136.3	152.0	167.6	183.3	214.6	245.9
IN125	128.7	159.5	187.5	215.4	243.4	271.4	299.4	327.4	383.3	439.3
IN140	196	237	278	319	360	401	442	483	565	647
IN160	263.5	326.6	383.9	441.2	498.5	555.8	613.1	670.4	785.0	899.7
IN190	428.5	518.0	607.3	696.6	785.9	875.3	964.6	1053.9	1232.5	1411.1
IN210	598.2	723.2	847.9	972.6	1097.3	1222.0	1346.6	1471.3	1720.7	1970.1
IN240	928.3	1122.0	1315.0	1508.0	1702.0	1895.0	2089.0	2282.0	2669.0	3056.0
IN270	1305.0	1577.0	1849.0	2121.0	2393.0	2665.0	2937.0	3209.0	3753.0	4297.0
IN300	1678.6	2029.4	2379.3	2729.2	3079.1	3429.0	3778.9	4128.8	4828.5	5528.3
IN350	2492.5	3011.8	3531.1	4050.4	4569.6	5088.9	5608.2	6127.5	7166.0	8204.6
IN400	3798.1	4589.4	5380.7	6172.0	6963.3	7754.5	8545.8	9337.1	10919.7	12502.2

TORQUE ACTUADOR: SIMPLE EFECTO Nm

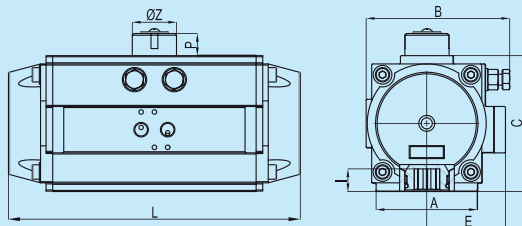
MODELO	PRESIÓN DE SUMINISTROS (BAR)																				DESPLAZAMIENTO DEL RESORTE	
	2.5		3		3.5		4		4.5		5		5.5		6		7		8			
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
IN050 S05	5.1	3.4	6.9	5.3	8.8	7.2	10.7	9.0	12.5	10.9	14.4	12.8	16.3	14.6	18.1	16.5	21.9	20.2	25.6	23.9	5.2	3.5
IN050 S06	4.4	2.4	6.2	4.3	8.1	6.1	10.0	8.0	11.8	9.9	13.7	11.7	15.6	13.6	17.4	15.5	21.2	19.2	24.9	22.9	6.2	4.2
IN050 S07			5.5	3.2	7.4	5.1	9.3	7.0	11.1	8.8	13.0	10.7	14.9	12.6	16.7	14.4	20.5	18.2	24.2	21.9	7.2	4.9
IN050 S08					6.7	4.1	8.6	5.9	10.4	7.8	12.3	9.7	14.2	11.5	16.0	13.4	19.8	17.1	23.5	20.9	8.2	5.6
IN050 S09							7.9	4.9	9.7	6.8	11.6	8.6	13.5	10.5	15.3	12.4	19.1	16.1	22.8	19.8	9.3	6.3
IN050 S10									9.0	5.7	10.9	7.6	12.8	9.5	14.6	11.3	18.4	15.1	22.1	18.8	10.3	7.0
IN050 S11											10.2	6.6	12.1	8.4	13.9	10.3	17.7	14.0	21.4	17.8	11.3	7.7
IN050 S12													11.4	7.4	13.2	9.3	17.0	13.0	20.7	16.7	12.4	8.4
IN065 S05	8.7	4.3	12.5	8.1	16.3	11.9	20.0	15.6	23.8	19.4	27.6	23.2	31.4	27.0	35.2	30.8	42.7	38.3	50.3	45.9	13.1	8.7
IN065 S06	7.0	1.7	10.7	5.5	14.5	9.2	18.3	13.0	22.1	16.8	25.9	20.6	29.7	24.4	33.4	28.2	41.0	35.7	48.6	43.3	15.7	10.4
IN065 S07			9.0	2.8	12.8	6.6	16.6	10.4	20.4	14.2	24.1	18.0	27.9	21.8	31.7	25.5	39.3	33.1	46.8	40.7	18.3	12.2
IN065 S08					11.0	4.0	14.8	7.8	18.6	11.6	22.4	15.4	26.2	19.1	30.0	22.9	37.5	30.5	45.1	38.1	21.0	13.9
IN065 S09							13.1	5.2	16.9	9.0	20.7	12.7	24.4	16.5	28.2	20.3	35.8	27.9	43.4	35.4	23.6	15.7
IN065 S10									15.1	6.3	18.9	10.1	22.7	13.9	26.5	17.7	34.0	25.2	41.6	32.8	26.2	17.4
IN065 S11											17.2	7.5	21.0	11.3	24.7	15.1	32.3	22.6	39.9	30.2	28.8	19.1
IN065 S12													19.2	8.7	23.0	12.4	30.6	20.0	38.1	27.6	31.4	20.9
IN075 S05	16.3	10.2	22.2	16.0	28.1	21.9	34.0	27.8	39.8	33.7	45.7	39.6	51.6	45.4	57.5	51.3	69.2	63.1	81.0	74.8	16.9	10.7
IN075 S06	14.2	6.8	20.1	12.7	25.9	18.6	31.8	24.4	37.7	30.3	43.6	36.2	49.4	42.1	55.3	47.9	67.1	59.7	78.8	71.4	20.2	12.8
IN075 S07			17.9	9.3	23.8	15.2	29.7	21.1	35.6	26.9	41.4	32.8	47.3	38.7	53.2	44.6	64.9	56.3	76.7	68.1	23.6	15.0
IN075 S08					21.7	11.8	27.5	17.7	33.4	23.6	39.3	29.4	45.2	35.3	51.0	41.2	62.8	53.0	74.5	64.7	27.0	17.1
IN075 S09							25.4	14.3	31.3	20.2	37.1	26.1	43.0	32.0	48.9	37.8	60.7	49.6	72.4	61.3	30.3	19.3
IN075 S10									29.1	16.8	35.0	22.7	40.9	28.6	46.8	34.5	58.5	46.2	70.3	58.0	33.7	21.4
IN075 S11											32.9	19.3	38.7	25.2	44.6	31.1	56.4	42.8	68.1	54.6	37.1	23.5
IN075 S12													36.6	21.8	42.5	27.7	54.2	39.5	66.0	51.2	40.4	25.7
IN085 S05	23.2	13.7	31.8	22.3	40.4	30.9	49.0	39.5	57.6	48.1	66.3	56.8	74.9	65.4	83.5	74.0	100.8	91.3	118.0	108.5	26.1	16.6
IN085 S06	19.8	8.4	28.4	17.0	37.1	25.7	45.7	34.3	54.3	42.9	62.9	51.5	71.6	60.2	80.2	68.8	97.4	86.0	114.7	103.3	31.3	19.9
IN085 S07			25.1	11.8	33.8	20.5	42.4	29.1	51.0	37.7	59.6	46.3	68.3	55.0	76.9	63.6	94.1	80.8	111.4	98.1	36.5	23.2
IN085 S08					30.4	15.2	39.1	23.9	47.7	32.5	56.3	41.1	64.9	49.7	73.6	58.4	90.8	75.6	108.1	92.9	41.7	26.5
IN085 S09							35.8	18.7	44.4	27.3	53.0	35.9	61.6	44.5	70.3	53.2	87.5	70.4	104.8	87.7	46.9	29.8
IN085 S10									41.1	22.1	49.7	30.7	58.3	39.3	67.0	48.0	84.2	65.2	101.5	82.5	52.1	33.1
IN085 S11											46.4	25.5	55.0	34.1	63.6	42.7	80.9	60.0	98.1	77.2	57.3	36.4
IN085 S12													51.7	28.9	60.3	37.5	77.6	54.8	94.8	72.0	62.5	39.7
IN095 S05	33.6	20.9	45.8	33.0	57.9	45.1	70.0	57.3	82.1	69.4	94.3	81.5	106.4	93.6	118.5	105.8	142.7	130.0	167.0	154.2	34.9	22.1
IN095 S06	29.2	13.9	41.4	26.1	53.5	38.2	65.6	50.3	77.7	62.4	89.8	74.5	102.0	86.7	114.1	98.8	138.3	123.0	162.6	147.3	41.8	26.5
IN095 S07			36.9	19.1	49.1	31.2	61.2	43.3	73.3	55.4	85.4	67.6	97.5	79.7	109.7	91.8	133.9	116.1	158.1	140.3	48.8	30.9
IN095 S08					44.6	24.2	56.8	36.4	68.9	48.5	81.0	60.6	93.1	72.7	105.2	84.8	129.5	109.1	153.7	133.3	55.8	35.4
IN095 S09							52.3	29.4	64.5	41.5	76.6	53.6	88.7	65.8	100.8	77.9	125.1	102.1	149.3	126.4	62.7	39.8
IN095 S10									60.0	34.5	72.2	46.7	84.3	58.8	96.4	70.9	120.6	95.1	144.9	119.4	69.7	44.2
IN095 S11											67.7	39.7	79.9	51.8	92.0	63.9	116.2	88.2	140.5	112.4	76.7	48.6
IN095 S12													75.4	44.8	87.6	57.0	111.8	81.2	136.0	105.4	83.6	53.0
INT10 S05	43.4	26.2	60.7	43.4	76.4	59.1	92.0	74.8	107.7	90.4	123.4	106.1	139.0	121.8	154.7	137.4	186.0	168.8	217.3	200.1	45.9	28.6
INT10 S06	37.7	17.0	55.0	34.3	70.6	49.9	86.3	65.6	102.0	81.3	117.6	96.9	133.3	112.6	149.0	128.3	180.3	159.6	211.6	190.9	55.0	34.3
INT10 S07			49.3	25.1	64.9	40.8	80.6	56.4	96.2	72.1	111.9	87.8	127.6	103.4	143.2	119.1	174.6	150.4	205.9	181.8	64.2	40.0
INT10 S08					59.2	31.6	74.9	47.3	90.5	62.9	106.2	78.6	121.9	94.3	137.5	109.9	168.9	141.3	200.2	172.6	73.4	45.8
INT10 S09							69.1	38.1	84.8	53.8	100.5	69.4	116.1	85.1	131.8	100.8	163.1	132.1	194.5	163.4	82.5	51.5
INT10 S10									79.1	44.6	94.8	60.3	110.4	75.9	126.1	91.6	157.4	122.9	188.7	154.2	91.7	57.2
INT10 S11											89.0	51.1	104.7	66.7	120.4	82.4	151.7	113.7	183.0	145.1	100.9	62.9
INT10 S12													99.0	57.6	114.6	73.2	146.0	104.6	177.3	135.9	110.0	68.6

VISTA FRONTAL

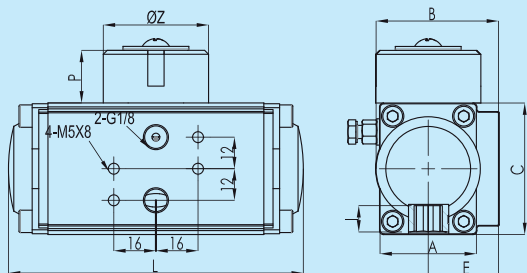
VISTA LATERAL

VISTA SUPERIOR

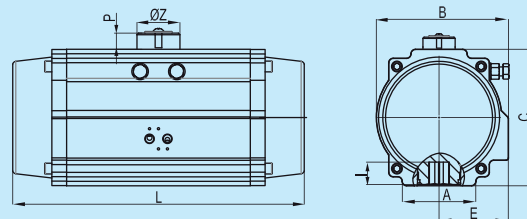
IN050-VT160



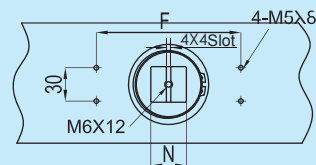
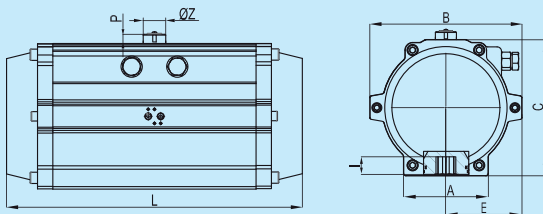
IN032



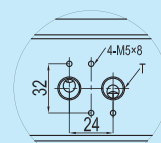
IN190-VT350



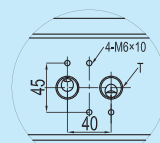
IN400



CONEXIÓN DE AIRE

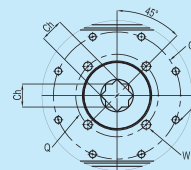


G1/4 NAMUR
IN50-IN210

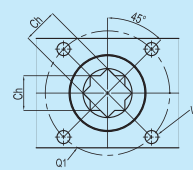


G1/2 NAMUR
IN240-IN400

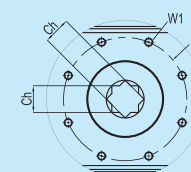
FONDO



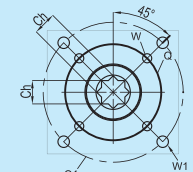
IN350



IN032 IN210 IN300



IN400



IN50 IN190

MODELO	A	B	C	L	E	F	P	ØZ	N	I	BRIDA	Q	Q1	W	W1	Ch	T
IN032	37	47	50	110	27	50	20	40	10	10	F03	-	36	-	M5x9	9x9	G1/8"
IN050	45	70.5	70	154	41.5	80	20	40	10	12	F03/05	36	50	M5x7.5	M6x9	11x11	G1/4"
IN065	62	89.5	89	189	51.5	80	20	40	10	16	F05/07	50	70	M6x9	M8x12	14x14	G1/4"
IN075	68	102.5	100	210	59	80	20	40	14	16	F05/07	50	70	M6x9	M8x12	14x14	G1/4"
IN085	68	112.5	113	229	63.5	80	20	40	14	19	F05/07	50	70	M6x9	M8x12	17x17	G1/4"
IN095	92	126	123	264	71	80	20	40	14	19	F05/07	70	102	M6x9	M8x12	17x17	G1/4"
IN110	93	138.5	136	266	76.5	80	20	40	14	19	F07/10	70	102	M8x12	M10x15	17x17	G1/4"
IN125	96	157	161	337	85	80	30	56	22	25	F07/10	70	102	M8x12	M10x15	22x22	G1/4"
IN140	110	178	178	377	97	80	30	56	22	31	F10/12	102	125	M10x15	M12x18	27x27	G1/4"
IN160	112	196	200	412	106	130	30	56	22	31	F10/12	102	125	M10x15	M12x18	27x27	G1/4"
IN190	136	216.5	232	488	112	130	30	56	22	41	F10/14	102	140	M10x15	M16x24	36x36	G1/4"
IN210	140	235.5	255	550	120	130	30	80	32	40	F14	-	140	-	M16x24	36x36	G1/4"
IN240	159	262	292	602	131	130	30	80	32	50	F16	-	165	-	M20x28	46x46	G1/2"
IN270	159	295	331	672	147.5	130	30	80	32	50	F16	-	165	-	M20x28	46x46	G1/2"
IN300	180	335	354	784	173	130	30	80	32	50	F16	-	165	-	M20x28	46x46	G1/2"
IN350	270	385	410	845	195	130	30	80	32	50	F16/F25	165	254	M20x28	M16x30	46x46	G1/2"
IN400	290	520	466	956	260	130	30	80	32	60	F25	-	254	-	M16x30	55x55	G1/2"



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