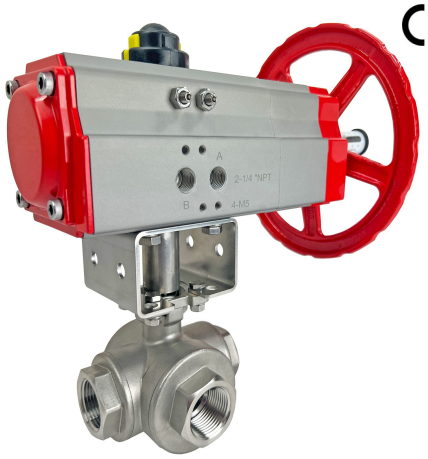
Pneumatic/ Manual Combo Stainless Ball Valves

3-Way L-Port Stainless Steel, Full Bore
1/4" to 2" NPT

SERIES
5255
5256

Features

- Functions as diverter or selector valve
- 316 stainless steel body, ball, & stem
- Pneumatic actuator with integral manual override
- RTFE (reinforced Teflon) ball seats
- Triple PTFE/Viton live loaded stem seals, adjustable
- Valves are tested per API 598
- Rack and pinion quarter turn (90°) rotation
- Spring Return or Double Acting Actuators
- Type IP67 weatherproof actuator
- Variable open/close stroke setting
- ATEX approved
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime



L- Flow Path

Position 1 - Shipped position

Applications

Pneumatic/ manual actuated stainless steel 3-way ball valves are typically used to control water, air, oil, vacuum and other media compatible with the materials of construction. Typically used as a diverter or selector valve. Unique four ball seat design allows for full pressure at any port. The de-clutch option can be used for manual operation or to set a stop limit for opening or closing. Cycle times approx. 1 to 2 seconds per 90° rotation. Steam service up to 25 PSI with optional high temperature mounting bracket. Suitable for vacuum service to 29.92 InHg (2.3 x 10-3 Torr).

Operation

Double acting actuators require air pressure to open and air pressure to close. Spring return actuators require air pressure to open and utilize springs to close for failsafe operation. Pulling the handwheel détente pin allows manual operation of the valve via the handwheel. Re-engaging the détente pin mid-stroke creates a partial stroke position, ie the automatic stroke begins/ends at the locked handwheel position. Rotating the handwheel counterclockwise rotates the output drive counterclockwise when viewed from the top.

Pilot Air should be filtered, dry or lubricated.

Description

Valworx heavy duty pneumatic/manual combination actuator features hard anodized aluminum enclosure, type IP67. Actuators are available in double acting and spring return models. Three port valve has a L-port flow path for diverter or selector applications. Adjustable live loaded stem seal packing helps compensate for wear, pressure or temperature fluctuations, extending the cycle life of the valve. Blow-out proof stem. Standard Namur mounting pads for optional accessories, including position confirmation switches and pilot solenoid valves. Rotation adjustment +5° at the 0° and 90° positions. The integral handwheel is used for manual operation and setting a limit stop.

Construction

Valve Body	316 stainless steel ASTM A351 CF8M
Ball/Stem	316 stainless steel
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	PTFE, Viton
Actuator Seals	NBR (Buna-N)
Actuator Body	Extruded aluminium, 40 micron polyester coated end covers
Position Indicator	Glass filled Polyamide
Fasteners	Stainless Steel

Approvals– Actuators

- CE Declaration of conformity
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting
- ATEX

ATEX

Standards– Valves

- Design: API 608
- Testing: API 598
- Threaded Connection: ASME B1.20.1 (NPT)/ ISO 228-1/ BS21
- Pressure/Temperature Rating: ASME B16.34
- Marking: MSS SP-25
- CE Conformance– PED 2014/68/UE

Construction Features

Heavy duty rugged rack and pinion design

Visual valve position indicator

Standard Namur top mounting for optional switches and positioners

Integral handwheel for manual operation

Anodized aluminum alloy covers with 40 micron polyester powder coating

Hard anodized aluminum body, Type IP67

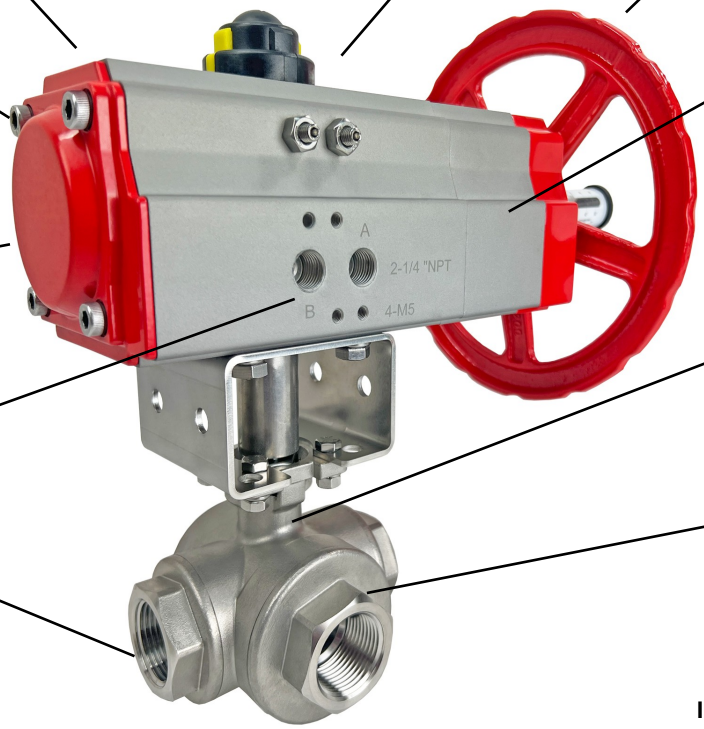
Spring return models use multiple pre-compressed spring cartridges with polyester coating

NPT pilot air ports and additional Namur VDI/VDE-3845 solenoid mounting pad

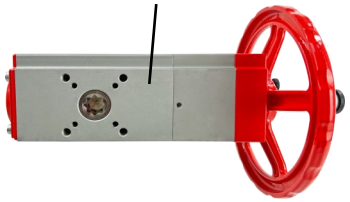
Triple PTFE/Viton live loaded stem seal design, adjustable

316SS ball and stem, RTFE ball seats

Full port 316 stainless steel ball valve



International standard ISO5211 valve mounting pad



Pressure Rating

Valve Pressure Rating: 1000 PSI (69 Bar) (1/4"-2")
25 PSI saturated steam with high temp kit,
Vacuum 29.92 InHg (2.3 x 10-3 Torr)

*See P/T chart

Pilot Air Pressure– Double Acting: 29-120 PSI (2-8 Bar)

Pilot Air Pressure– Spring Return: 87-120 PSI (6-8 Bar)

Temperature Rating

Ball Valve Temperature Rating: -4 to 392° F (-20 to 200° C)

Actuator Temperature Rating: -4 to 176° F (-20 to 80° C)

*See P/T chart

Optional Accessories

DMS: Direct Mount Solenoid
- pilot to electrically operate the ball valve
VPS: Valve Position Switches
- limit switches to confirm valve position
PVP: Pneumatic Valve Positioner
- position the ball with 4-20mA
HTB: High Temperature Bracket
- increases media working temperature
Lock out/Tag out device
Inline mounting

Specifications (English units)

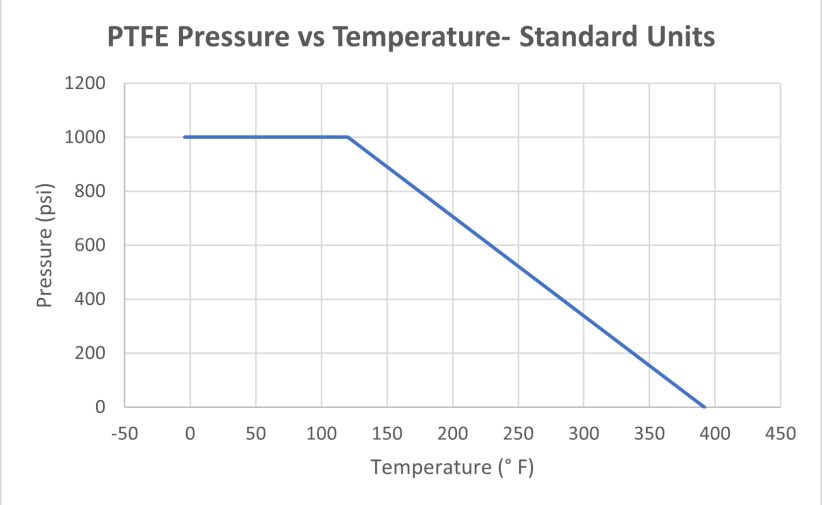
Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Air Volume/90° (cubic inches)	Cycle Time /90°	Pilot Air Port (NPT)
L- PORT VALVE WITH PNEUMATIC/ MANUAL SPRING RETURN ACTUATOR							
525602	1/4	0.4	5.0	1000	18.3	1	1/4
525603	3/8	0.4	7.3	1000	18.3	1	1/4
525604	1/2	0.6	8.9	1000	18.3	1	1/4
525606	3/4	0.8	18.9	1000	42.7	1	1/4
525608	1	1.0	32.0	1000	54.9	2-1	1/4
525610	1-1/4	1.3	41.2	1000	54.9	2-1	1/4
525612	1-1/2	1.5	52.1	1000	128.1	2-1	1/4
525616	2	2.0	79.3	1000	128.1	2-1	1/4
L- PORT VALVE WITH PNEUMATIC/ MANUAL DOUBLE ACTING ACTUATOR							
525502	1/4	0.4	5.0	1000	18.3	1	1/4
525503	3/8	0.4	7.3	1000	18.3	1	1/4
525504	1/2	0.6	8.9	1000	18.3	1	1/4
525506	3/4	0.8	18.9	1000	18.3	1	1/4
525508	1	1.0	32.0	1000	54.9	1	1/4
525510	1-1/4	1.3	41.2	1000	54.9	1	1/4
525512	1-1/2	1.5	52.1	1000	91.5	1	1/4
525516	2	2.0	79.3	1000	128.1	1	1/4

Cv is the GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

* Pressure @ 100° F (see P/T chart)

Pressure/Temperature Chart (PSI/°F)

P/T Chart (PSI/°F)					
PSI	1000	1000	900	700	0
°F	-4	104	167	212	392



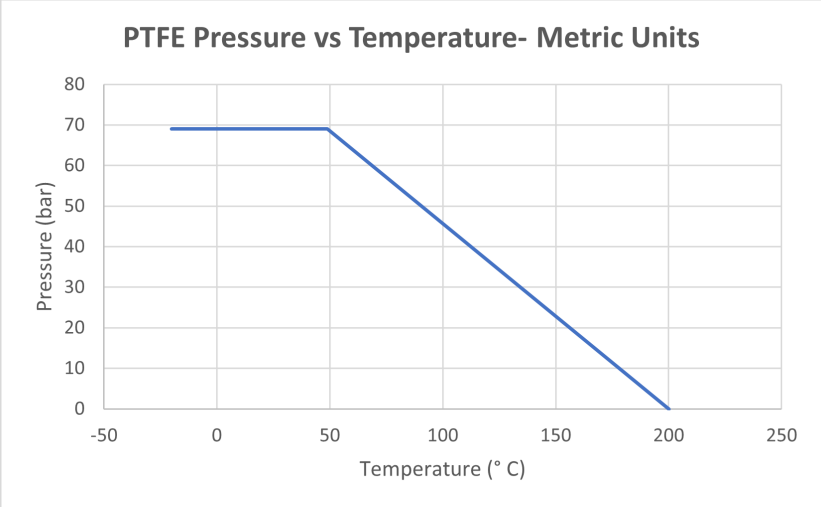
Specifications (Metric units)

Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Air Volume/90° (cubic liters)	Cycle Time /90° (open-close)	Pilot Air Port (NPT)
L- PORT VALVE WITH PNEUMATIC/ MANUAL SPRING RETURN ACTUATOR							
525602	1/4	11	4.3	69	0.3	1	1/4
525603	3/8	11	6.3	69	0.3	1	1/4
525604	1/2	16	7.7	69	0.3	1	1/4
525606	3/4	20	16.3	69	0.7	1	1/4
525608	1	25	27.7	69	0.9	2-1	1/4
525610	1-1/4	32	35.6	69	0.9	2-1	1/4
525612	1-1/2	38	45.1	69	2.1	2-1	1/4
525616	2	50	68.6	69	2.1	2-1	1/4
L- PORT VALVE WITH PNEUMATIC/ MANUAL DOUBLE ACTING ACTUATOR							
525502	1/4	11	4.3	69	0.3	1	1/4
525503	3/8	11	6.3	69	0.3	1	1/4
525504	1/2	16	7.7	69	0.3	1	1/4
525506	3/4	20	16.3	69	0.3	1	1/4
525508	1	25	27.7	69	0.9	1	1/4
525510	1-1/4	32	35.6	69	0.9	1	1/4
525512	1-1/2	38	45.1	69	1.5	1	1/4
525516	2	50	68.6	69	2.1	1	1/4

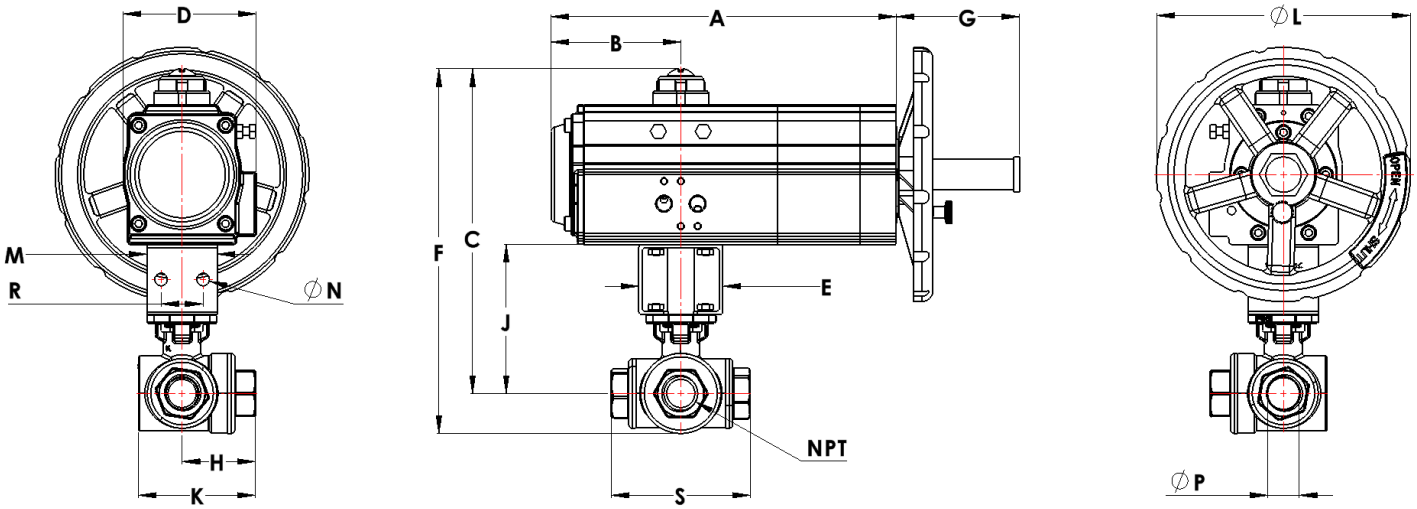
* Pressure @ 70° C (see P/T chart)

Pressure/Temperature Chart (Bar/°C)

P/T Chart (BAR/°C)					
BAR	69	69	62	48	0
°C	-20	40	75	100	200

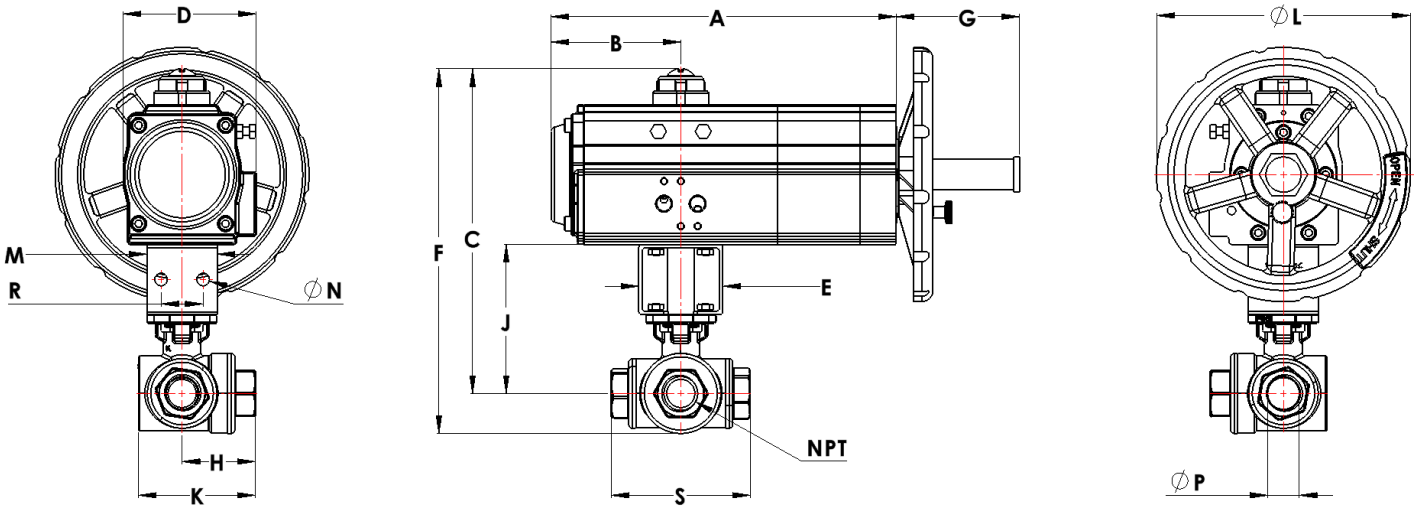


Dimensions: Spring Return



Pipe Size (NPT)		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Ports (NPT)	Weight lb/ kg
1/4	inch	8.3	3.1	7.0	2.6	1.9	7.8	2.9	1.5	3.4	5.8	7.1	2.0	0.3	0.4	1.2	2.9	1/4	8.6 lb
	mm	210.8	78.7	177.8	66.0	50.0	198.1	73.7	38.5	86.4	152.0	180.0	50.0	9.0	11.0	30.0	76.0	-	3.9 kg
3/8	inch	8.3	3.1	7.0	2.6	1.9	7.8	2.9	1.5	3.4	5.8	7.1	2.0	0.3	0.4	1.2	2.9	1/4	8.4 lb
	mm	210.8	78.7	177.8	66.0	50.0	198.1	73.7	38.5	86.4	152.0	180.0	50.0	9.0	11.0	30.0	76.0	-	3.8 kg
1/2	inch	8.3	3.1	7.2	2.6	1.9	8.2	2.9	1.8	3.6	6.6	7.1	2.0	0.3	0.6	1.2	3.3	1/4	9.2 lb
	mm	210.8	78.7	182.9	66.0	50.0	208.3	73.7	45.0	91.4	170.0	180.0	50.0	9.0	16.0	30.0	85.0	-	4.2 kg
3/4	inch	9.6	3.6	8.5	3.1	1.9	9.9	3.5	2.0	3.8	7.8	7.1	2.8	0.3	0.8	1.4	3.9	1/4	16.1 lb
	mm	243.8	91.4	215.9	78.7	50.0	251.5	88.9	51.5	96.5	196.0	180.0	70.0	9.0	20.0	35.0	98.0	-	7.3 kg
1	inch	10.7	4.2	9.2	3.6	1.9	10.8	4.0	2.3	4.1	8.8	7.7	2.8	0.3	1.0	1.4	4.4	1/4	20.0 lb
	mm	271.8	106.7	233.7	91.4	50.0	274.3	101.6	58.0	104.1	225.0	195.0	70.0	9.0	25.0	35.0	112.5	-	9.1 kg
1-1/4	inch	10.7	4.2	9.5	3.6	1.9	11.6	4.0	2.5	4.4	9.8	7.7	2.8	0.3	1.3	1.4	4.9	1/4	22.4 lb
	mm	271.8	106.7	241.3	91.4	50.0	294.6	101.6	63.0	111.8	250.0	195.0	70.0	9.0	32.0	35.0	125.0	-	10.2 kg
1-1/2	inch	13.6	5.3	10.7	4.3	1.9	13.3	4.9	2.9	4.7	11.2	9.8	4.0	0.4	1.5	2.0	5.6	1/4	40.2 lb
	mm	345.4	134.6	271.8	109.2	50.0	337.8	124.5	74.5	119.4	282.0	250.0	102.0	11.0	38.0	50.0	141.0	-	18.3 kg
2	inch	13.6	5.3	11.3	4.3	1.9	14.2	4.9	3.4	5.3	13.4	9.8	4.0	0.4	2.0	2.0	6.7	1/4	47.5 lb
	mm	345.4	134.6	287.0	109.2	50.0	360.7	124.5	85.5	134.6	342.0	250.0	102.0	11.0	50.0	50.0	171.0	-	21.6 kg

Dimensions: Double Acting



Pipe Size (NPT)		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Ports (NPT)	Weight lb/ kg
1/4	inch	8.3	3.1	7.0	2.6	1.9	7.8	2.9	1.5	3.4	5.8	7.1	2.0	0.3	0.4	1.2	2.9	1/4	8.6 lb
	mm	210.8	78.7	177.8	66.0	50.0	198.1	73.7	38.5	86.4	152.0	180.0	50.0	9.0	11.0	30.0	76.0	-	3.9 kg
3/8	inch	8.3	3.1	7.0	2.6	1.9	7.8	2.9	1.5	3.4	5.8	7.1	2.0	0.3	0.4	1.2	2.9	1/4	8.4 lb
	mm	210.8	78.7	177.8	66.0	50.0	198.1	73.7	38.5	86.4	152.0	180.0	50.0	9.0	11.0	30.0	76.0	-	3.8 kg
1/2	inch	8.3	3.1	7.2	2.6	1.9	8.2	2.9	1.8	3.6	6.6	7.1	2.0	0.3	0.6	1.2	3.3	1/4	9.2 lb
	mm	210.8	78.7	182.9	66.0	50.0	208.3	73.7	45.0	91.4	170.0	180.0	50.0	9.0	16.0	30.0	85.0	-	4.2 kg
3/4	inch	8.3	3.1	7.4	2.6	1.9	8.8	2.9	2.0	3.8	7.8	7.1	2.0	0.3	0.8	1.2	3.9	1/4	10.1 lb
	mm	210.8	78.7	188.0	66.0	50.0	223.5	73.7	51.5	96.5	196.0	180.0	50.0	9.0	20.0	30.0	98.0	-	4.6 kg
1	inch	10.7	4.2	9.2	3.6	1.9	10.8	4.0	2.3	4.1	8.8	7.7	2.8	0.3	1.0	1.2	4.4	1/4	15.8 lb
	mm	271.8	106.7	233.7	91.4	50.0	274.3	101.6	58.0	104.1	225.0	195.0	70.0	9.0	25.0	35.0	112.5	-	7.2 kg
1-1/4	inch	10.7	4.2	9.5	3.6	1.9	11.6	4.0	2.5	4.4	9.8	7.7	2.8	0.3	1.3	1.4	4.9	1/4	18.4 lb
	mm	271.8	106.7	241.3	91.4	50.0	294.6	101.6	63.0	111.8	250.0	195.0	70.0	9.0	32.0	35.0	125.0	-	8.4 lg
1-1/2	inch	13.4	5.2	10.1	3.9	1.9	12.7	4.3	2.9	4.7	11.2	9.8	2.8	0.3	1.5	1.4	5.6	1/4	24.1 lb
	mm	340.4	132.1	256.5	99.1	50.0	322.6	109.2	74.5	119.4	282.0	250.0	70.0	9.0	38.0	35.0	141.0	-	11.0 kg
2	inch	13.6	5.3	11.3	4.3	1.9	14.2	4.9	3.4	5.3	13.4	9.8	2.8	0.3	2.0	1.4	6.7	1/4	33.5 lb
	mm	345.4	134.6	287.0	109.2	50.0	360.7	124.5	85.5	134.6	342.0	250.0	70.0	9.0	50.0	35.0	171.0	-	15.2 kg