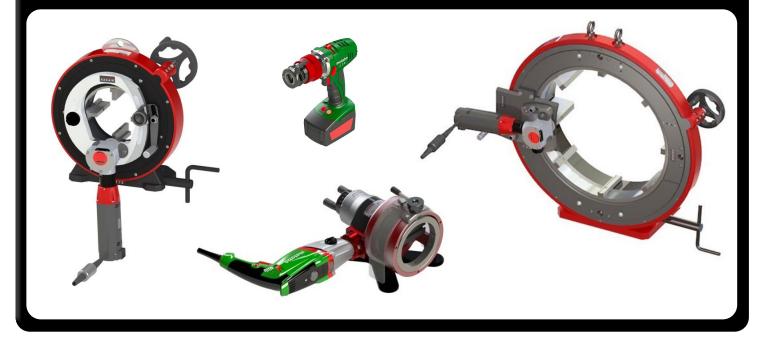
MARCH 2022



# **ORBITAL WELDING CLOSED HEADS**

#### ORBITAL CUTTING AND FACING



#### ORBITAL WELDING





www.AXXAIR.com

## **Orbital welding** (Closed heads)



INNOVATIVE ORBITAL SOLUTIONS

Our new range of closed SATFX welding heads enables you to achieve high quality welds in a minimal space.

Orbital welding with a closed head is done by a **simple fusion without additional wire feeding.** Consequently, these heads are recommended for welding **thin tubes of many types of stainless steel** with thicknesses of less than 3 mm.

SATFX heads are also indispensable for welding other nickel or titanium based alloys which are very sensitive to oxidation and are used when an installation with an impeccable resistance to chemicals or heat is required.



The new SATFX heads have been designed to meet the needs of our customers who are often confronted with the most demanding welding specifications.

The protective atmosphere provided by the closed heads permits welding in an inerting chamber. This results in welds with very minimal discoloration and perfectly clean weld beads.

This type of equipment is used in **industrial** sectors sensitive to hygienic conditions such

as aeronautics, semi-conductors, pharmaceuticals as well as food and beverage processing.

The narrow width of the head makes it ideal for construction sites where only a small amount of straight sections are in demand. However, these welding heads are also used in workshops and clean rooms.

The SATFX range, coupled with our SAXX welding power supplies and their continuous monitoring of welding parameters, guarantee **repeatable welds of high quality**. This type of weld passes the most strenuous tests, such as X-ray inspection.

#### FLEXIBILITY, PRODUCTIVITY



Productivity remains our top priority. The liquid cooling circuit has been optimized to allow for greater heat evacuation and thus:

increases the service life of the SATFX
guarantees a substantial welding output. The operating current at 100% is **100 A.**

#### **QUALITY AND REPEATABILITY**

Direct wire feeding and a homogeneous diffusion of the inert gas, high quality materials and special component processing, a grease-free operation, easy maintenance and cleaning plus numerous configurations make the SATFX range the ideal response to the requirements of high-tech industries.



They allow for intense, versatile and long-lasting usage on your construction sites and in your workshops.

#### **INNOVATION : GLOBAL PROCESS 2 in 1**

The SATFX closed welding heads can easily be

transformed into a cassette machine. The cassette allows for easy placement on the parts to be welded in confined areas. Welding without tacking is possible under certain conditions.\*

Please do not hesitate to contact us for all enquiries relating to orbital welding technology.

We will be glad to share our knowhow with you and to devise a solution that best meets your needs!







\*contact us for more information

## Join experience

V3.2 - 03/2022

SATFX-52 - 76 - 115

High protection against arcing outside the electrode

Power drive system with encoder: allows starting in all angular positions of the electrode

Water cooling of the electrode holder and aluminium flanges.

Standard stainless steel jaws for quick assembly without

tools.

Wide aluminium jaws for optimal machine stability when welding accessories.

Illuminated logo on each side

Operating without grease: compatible with clean room standards.

Length of the cable: 8 meters

#### Global Process: 2 in 1

Cassettes for welding in confined areas.

Easy positioning of the cassette on the parts to be welded before fixing the central body of the head.



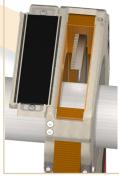
These heads are delivered in a water- and dustproof suitcase and with a suspension assembly.

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Large pivoting window with welding glass to check the electrode alignment after tightening the two frames.



The welding glass (shade10) allows to observe the weld and protect the operator's eyes.

Closing system with adjustable force without tools. Allows precise adjustment of the force of the jaws on the tube to be welded and helps opening after welding.

Perfect gas protection in the welding head.

**Optimized handling:** Ergonomic design with soft touch compound areas and overall weight greatly reduced.

4 stainless steel remote control buttons.

Welding range							
SATFX-52	ø 6 - ø 52 mm 0.25 - 2 "						
SATFX-76	<mark>ø 6- ø</mark> 77 mm 0.25 - 3 "						
SATFX-115	<mark>ø 12 -</mark> ø 115 mm 0.5 - 4.5 "						





#### Join experience

XXX INNOVATIVE ORBITAL SOLUTIONS

# SATFX-52 - 76 - 115

#### **Technical characteristics:**

Maximum welding current	150 A
100% duty cycle	100 A

These closed heads are designed for orbital butt TIG welding of tubes, tubes-elbows, tube-ferrules, tubes-T, tubes-fittings and others in a fully inerted closed chamber.

The SATFX heads are driven by the AXXAIR orbital welding power sources of the SAXX range.

Integral water cooling of the heads and new treatment of the aluminium parts offering a better electrical and thermal conductivity.

The double cooling of the rotor and the head body is essential to guarantee a good lifespan of the parts by minimizing the effects of expansion deformation.

Illuminated logo on each side of the head : it allows to visualize if the power source is turned on or off and if the machine is in a welding cycle or not.



When the power source is powered on and the head connected, the light is on steady. When the machine is welding, the indicator light flashes.



4 stainless steel remote control buttons: Start/stop, gas purging, rotation of the rotor in one direction and rotation in the other direction.

Regardless of the starting position during welding, the rotor automatically returns to the open position of the rotor so that the welded parts can be removed easily.

#### Ergonomic design:

Ergonomic handle with soft touch overmolding that brings the hand closer to the center of gravity of the head, providing unparalleled handling comfort.

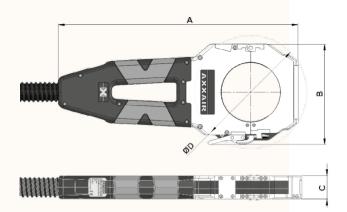
#### Maintenance :

All rotation axes and toggle clamps can easily be changed.



**Cleaning:** A single hexagonal wrench allows the machine to be disassembled in a few minutes to clean the interior, without having to empty the head's coolant circuit.

Gas diffusion: more direct gas supply through two sintered bronze semi-circular bunds. This allows a trouble-free distribution and flow, even with a high gas flow rate and without blowing out the arc. Max flow rate: 60l/min



Thickness of 37.6 mm: possibility to weld with the stainless steel jaws standard microfitting fittings or other accessories with a straight part of 19.1 mm.

Product Code	Description	Tube welding machine for the following diameters	Net weight with cable	Dimensions A x B x C in mm	Dimensions D
SATFX-52	Water-cooled closed head	ø 6 - ø 52 mm	8.6 kg	375 x 142 x 37,6	ø 160 mm
SATFX-76	with <b>8m ca-</b> <b>ble</b> for SAXX	ø 6 - ø 77 mm	8.9 kg	399 x 166 x 37,6	ø 187 mm
SATFX-115	welding power sources	ø 12 - ø 115 mm	9.4 kg	439 x 206 x 37,6	ø 242 mm

## Join experience





INNOVATIVE ORBITAL SOLUTIONS

### **Orbital welding** (Closed heads) - Accessories Cassettes

#### **Global Process 2 in 1**

These cassettes are intended to be mounted on the closed welding heads of the SATFX range. They allow the operator to perform welds in a cramped and restrictive environment, where it is difficult to operate these welding machines.

When the cassette is in place on the tubes or accessories to be welded, the operator only has to fix the machine body in the cassette and then start the welding program from the power supply or from the welding head's keyboard.

Flexibility: The SATFX heads can be quickly converted to cassette machines and vice versa.

Please note that the cassettes can be ordered later on.

Thin and wide clamping jaws can be used.



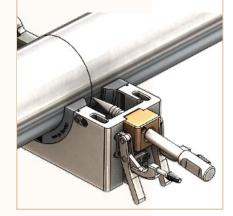
Interface to be fixed on the welding head.

Cassette clamping lever on machine.



Positioning pen for placing the cassette on two tubes or accessories in line, already tacked.

The tip of the pen represents the tip of the electrode.



The cassettes benefit from the same closing system with adjustable force without tools that allows precise adjustment of the jaw force on the tube to be welded and assists opening after welding.





## Join experience

## **Orbital welding** (Closed heads) - Accessories Cassettes

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Product Code	D	Net weig	ght	Packaging (in cm)				
SATFX52-CA01	Casset	te for SATFX-52	2,3 kg	I	30 x 30 x 15			
spaces. Easy pos	Cassette to be mounted on the SATFX-52 closed welding head for welding in <b>confined spaces</b> . Easy positioning of the cassette on the parts to be welded before fixing the central body of the head.							
√SATFX-52		SATFX-76			SATFX-115			



	Product Code	D	Net weig	ht	Packaging (in c	m)		
	SATFX76-CA01	Casset	2,7 kg		30 x 30 x 15			
	Cassette to be mounted on the SATFX-76 closed welding head for welding in <b>confined spaces</b> . Easy positioning of the cassette on the parts to be welded before fixing the central body of the head.							
SATFX-52		✓SATFX-76	5		SATFX-115			

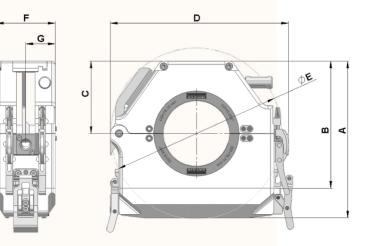


Product Code	D	escription	Net wei	ght	Packaging (in cm)			
SATFX115-CA01	ATFX115-CA01 Cassette for SATFX-115				30 x 30 x 15			
spaces. Easy pos	SATFX115-CA01Cassette for SATFX-1153,5kg30 x 30 x 15Cassette to be mounted on the SATFX-115 closed welding head for welding in confinedspaces. Easy positioning of the cassette on the parts to be welded before fixing the central body of the head.							
		<b>-</b>						

SATFX-52	SATFX-76	✓ SATFX-115

	SATFX52-CA01	SATEX76-CA01	SATFX115-CA01	
	3ATT X32-0A01	3ATT X70-0A01	SAIT XTTS-OAUT	
Α	158	182	222,5	
В	123,5	147,5	188	
С	72	84	104	
D	182,5	206,5	246,5	
ØE	175	199	238	
F	68,1	68,1	68,1	
G	34,05	34,05	34,05	

Join experience







### Orbital welding (Closed heads) - Accessories

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Packaging

(in cm)

20 x 20 x 20

|--|--|

VSATFX-52

√SATFX-76

Product

Code

SATFX-SUP

barrier, etc...).

✓ SATFX-115

Net

weight

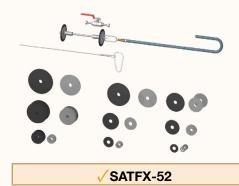
1.39 kg

**Description** 

Machine

support

This modular support allows the installation of the machine on all possible types of support (workbench,



Product Code Description		Net weight	Packaging (in cm)				
SKIF-01	SKIF-01 Gas protection KIT		35 x 30 x 9.5				
SKIF-01Gas protection KIT4.5 kg35 x 30 x 9.5Gas membrane protection KIT for tubesØ 40 to 120 mm- consists of: 9 sets of membranes with washers, 1 gas pipe 6 m,1 metal cable, 1 ¼ turn gas valve, 1 carabinerInerting the tubes during welding allows more gas savings as we only inert the area to be welded.							
✓ SATFX-76 ✓ SATFX-115							

• .	. 1	Product Code	Description	Net weight	Packaging (in cm)
2-1-1-1		SKIB-01	Gas protection KIT	1.7 kg	35 x 30 x 9.5
	¥ , ¥ ,	Gas plug protection KIT for tubes Ø 6 to 41 mm - Consists of: 10 sets of perforated plugs, 1 gas inlet connector, 1 hos 4/6 length 5 metres Facilitates and accelerates inerting. Avoids the use of adhesive page			
✓ SATFX-5	2	✓ SATFX-76 ✓ SATFX-115			

To increase the operating distance between the welding head and the SAXX power source, we offer cable extensions.



SAXX power source, we offer cable extensions. In order to guarantee the proper functioning of the machine, a **maximum length of 20m of extension or a maximum quantity of 2 extension cables** is recommended. For a higher need, please consult us.

Cooling	g and use	Length	Product Code	Net weight	Dimensions (AxBxC in mm)
WA	TER -	5 metres	SAFS-05MX	7 kg	40 x 59 x 25
WITHOUT WIRE	10 metres	SAFS-10MX	14 kg	40 x 59 x 25	
	✓ SATFX-76				X-115

SATFX-52

### Join experience





V3.2 - 03/2022

## **Orbital welding** (Closed heads) - Accessories

INNOVATIVE ORBITAL SOLUTIONS

#### Thin clamping jaws, thickness 8 mm, stainless steel

A set of thin clamping jaws consists of **four half-shells** machined to the outside diameter of the tube.

For Machine Product Code		Net weight	Packaging (plastic)	
SATFX-52	SMN052-xx	Depending on the tube ø	7.5 x 8 x 3 cm	
SATFX-76	SMN076-xx	Depending on the tube ø	11 x 11.5 x 3 cm	
SATFX-115	SMN115-xx	Depending on the tube ø	17 x 18 x 3 cm	

To order the jaws, replace xx with the outside diameter of the tube you want to weld. Example: A set of jaws for clamping a tube with an outside diameter of ø 38.10 mm = SMN052-38.1

√SATFX-52 √SATFX-76 √SATFX-115
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#### Wide clamping jaws, thickness 22 mm, aluminium

One set of wide jaws consists of two half shells machined to the external diameter of the tube.

For Machine	Product Code	le Net weight Packaging (pla	
SATFX-52	SML052-xx	Depending on the tube ø	7.5 x 8 x 3 cm
SATFX-76	SML076-xx	Depending on the tube ø	11 x 11.5 x 3 cm
SATFX-115	SML115-xx	Depending on the tube ø	17 x 18 x 3 cm

To order the jaws, replace xx with the outside diameter of the tube you want to weld. Example: A set of jaws for clamping a tube with an outside diameter of ø 38.10 mm = SML052-38.1

**SATFX-52** 

✓ SATFX-76

SATFX-115

#### Clamping jaws adaptation spacers, thickness 8 mm, stainless steel

A set of spacers consists of **four half-shells** machined to the outside shape of the jaws concerned. It allows you to use the jaws of a machine of lower capacity.

	For Machine	Jaws that you can use	Product code	Net weight	Packaging (plastic)
	OATEV 70	SATF-40NDHX	SMN076-ET40	0.5 kg	7.5 x 8 x 3 cm
	SATFX-76	SATFX-52	SMN076-ET52	0.4 kg	7.5 x 8 x 3 cm
		SATF-40NDHX	SMN115-ET40	1.7 kg	7.5 x 8 x 3 cm
	OATEV 115	SATFX-52	SMN115-ET52	1.2 kg	7.5 x 8 x 3 cm
	SATFX-115	SATF-65NDHX	SMN115-ET65	1.0 kg	11 x 11.5 x 3 cm
		SATFX-76	SMN115-ET76	0.9 kg	11 x 11.5 x 3 cm

Exemple: With the spacer SMN115-ET76, you can use the jaws of the head SATFX-76 with the SATFX-115.

SATFX-52	
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✓ SATFX-76

SATFX-115

AXXAIR also offers adaptation spacers for jaws from other manufacturers. For further information, please contact us.





#### Join experience

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INNOVATIVE OBBITAL SOLUTIONS

## **Orbital welding** (Closed heads) - Accessories

In order to fit various configurations of parts to be welded, AXXAIR offers flanges with a perfect shape for your elbows.

The use of these elbow flanges allows an optimized gas protection while avoiding the use of tape and the cleaning of the elbow after welding.

#### Use with SATFX 52 - 76 - 115

Support jaws

Elbow flanges

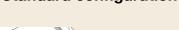
For welding your elbow-tube with a closed head, you will need:

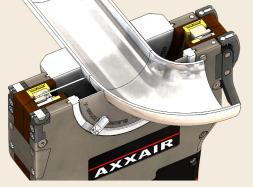
- the specific elbow flange support jaws (2 halfshells) for your machine

- Elbow flanges (2 half-shells) for each outer diameter and radius of your elbow to be welded

The use of the SSEDX offset electrode support may be required depending on the configuration of the elbow to be welded (in the following product code table, the SSEDX column shows whether the accessories is needed or not).

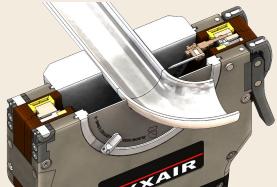
#### Standard configuration





Welding axis aligned with the machine

Configuration with offset electrode holder required



Offset welding axis with regards to the machine/head

See the following «accessories» part for more details on the SSEDX offset electrode holder.







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#### **Orbital welding** (Closed heads) - Accessories

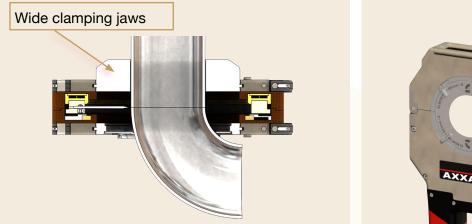
INNOVATIVE ORBITAL SOLUTIONS

#### Tube end

It is recommended to use wide clamping jaws (2 half-shells) to ensure a better hold of the closed head on the tube-elbow to be welded and already tacked.

#### Elbow end

The elbow flanges rotate in order to give flexibility and to fit perfectly your different configurations and welding postures.





#### Elbow flange support, thickness 10.6 mm, stainless steel



Join experience

A set of elbow flange support jaws is made of 2 thin half-shells.

For Machine	Product Code	Net Weight	Packaging (plastic)
SATFX-52	SMN052-SFLAX	0.088 kg	10 x 10 x 2.5 cm
SATFX-76	SMN076-SFLAX	0.118 kg	12.5 x 12.5 x 2.5 cm
SATFX-115	SMN115-SFLAX	0.168 kg	16 x 16 x 2.5 cm

These jaws have to be used with elbow flanges depending on elbow to be welded dimensions (OD and radius)

√SATFX-52	✓ SATFX-76	✓ SATFX-115
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## Orbital welding (Closed heads) -Accessories (Elbow Flanges)



INNOVATIVE ORBITAL SOLUTIONS

OD mm	R	SATFX-52	SATFX-76	SATFX-115	SSEDX
6	19	21AAA00-19A	31AAA00-19A		1
12	26	21ACI00-26A	31ACI00-26A	41ACI00-26A	√
12,7	19,05	21ACP00-19,05A	31ACP00-19,05A	41ACP00-19,05A	~
12,7	28,58	21ACP00-28,58A	31ACP00-28,58A	41ACP00-28,58A	~
12,7	38,1	21ACP00-38,1	31ACP00-38,1	41ACP00-38,1	
12,7	304,8	21ACP00-304,8	31ACP00-304,8	41ACP00-304,8	
13	26	21ACS00-26A	31ACS00-26A	41ACS00-26A	1
13,5	20	21ACX00-20A	31ACX00-20A	41ACX00-20A	~
13,5	21	21ACX00-21A	31ACX00-21A	41ACX00-21A	1
13,7	20	21ACZ00-20A	31ACZ00-20A	41ACZ00-20A	1
17,2	25	21AEI00-25A	31AEI00-25A	41AEI00-25A	~
17,2	30	21AEI00-30A	31AEI00-30A	41AEI00-30A	~
17,3	37,5	21AEJ00-37,5	31AEJ00-37,5	41AEJ00-37,5	
18	23	21AEQ00-23A	31AEQ00-23A	41AEQ00-23A	sinninninninninninninninninninninninninn
18	27	21AEQ00-27A	31AEQ00-27A	41AEQ00-27A	1
18	35	21AEQ00-35	31AEQ00-35	41AEQ00-35	
19	35	21AFA00-35	31AFA00-35	41AFA00-35	
19,05	28,6	21AFA01-28,6A	31AFA01-28,6A	41AFA01-28,6A	/////////////////////////////////////
19,05	38,1	21AFA01-35,1	31AFA01-38,1	41AFA01-38,1	
19,05	304,8	21AFA01-304,8	31AFA01-304,8	41AFA01-304,8	
20	26	21AFK00-26A	31AFK00-26A	41AFK00-26A	//////////////////////////////////////
20	30	21AFK00-20A 21AFK00-30A	31AFK00-30A	41AFK00-20A 41AFK00-30A	 ✓
20	25	21AFU00-30A	31AFU00-25A	41AFU00-25A	~
					~
21,3	28	21AFX00-28A	31AFX00-28A	41AFX00-28A	✓ ✓
21,3	27	21AFX00-27A	31AFX00-27A	41AFX00-27A	× ✓
21,3	31,95	21AFX00-31,95A	31AFX00-31,95A	41AFX00-31,95A	<b>▼</b>
21,3	38	21AFX00-38	31AFX00-38	41AFX00-38	
21,3	38,1	21AFX00-38,1	31AFX00-38,1	41AFX00-38,1	
21,3	45	21AFX00-45	31AFX00-45	41AFX00-45	
21,7	38,1	21AGB00-38,1	31AGB00-38,1	41AGB00-38,1	
22	40	21AGE00-40	31AGE00-40	41AGE00-40	
23	26	21AG000-26A	31AG000-26A	41AG000-26A	✓ ✓
23	30	21AG000-30A	31AGO00-30A	41AG000-30A	<b>,</b>
23	34,5	21AGO00-34,5	31AGO00-34,5	41AGO00-34,5	
23	40	21AGO00-40	31AGO00-40	41AGO00-40	
23	60	21AG000-60	31AGO00-60	41AGO00-60	
25	30	21AHI00-30A	31AHI00-30A	41AHI00-30A	V
25	33	21AHI00-33A	31AHI00-33A	41AHI00-33A	<b>v</b>
25	37	21AHI00-37	31AHI00-37	41AHI00-37	
25	37,5	21AHI00-37,5	31AHI00-37,5	41AHI00-37,5	
25	38	21AHI00-38	31AHI00-38	41AHI00-38	
25	38,1	21AHI00-38,1	31AHI00-38,1	41AHI00-38,1	
25	65	21AHI00-65	31AHI00-65	41AHI00-65	
25,4	27,5	21AHM00-27,5A	31AHM00-27,5A	41AHM00-27,5A	~
25,4	35	21AHM00-35A	31AHM00-35A	41AHM00-35A	<b>J</b>
25,4	38,1	21AHM00-38,1	31AHM00-38,1	41AHM00-38,1	
25,4	52,37	21AHM00-52,37	31AHM00-52,37	41AHM00-52,37	
25,4	304,8	21AHM00-304,8	31AHM00-304,8	41AHM00-304,8	
25,4	609,6	21AHM00-609,6	31AHM00-609,6	41AHM00-609,6	
26	30	21AHS00-30A	31AHS00-30A	41AHS00-30A	~
26,7	28	21AHZ00-28A	31AHZ00-28A	41AHZ00-28A	~
26,7	28,6	21AHZ00-28,6A	31AHZ00-28,6A	41AHZ00-28,6A	~



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PART OF

## Orbital welding (Closed heads) -**Accessories (Elbow Flanges)**

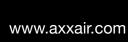
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INNOVATIVE ORBITAL SOLUTIONS

OD mm         R mm         SATFX-52         SATFX-76         SATFX-115         SSEDX           26,7         38,1         21AH200-38,1         31AH200-38,1         41AH200-38,1         41AH200-38,1           26,9         28         21AH800-28A         31AH200-38,1         41AH800-28A         √           26,9         28,5         21AH800-28A         31AH800-28A         41AH800-28A         √           26,9         29         21AH800-38         31AH800-38         41AH800-28A         √           26,9         40,35         21AH800-35         31AH800-38         41AH800-48,3         √           26,9         40,35         21AH800-35         31AH800-40,35         41AH800-48,4         √           27,2         28,6         21AH800-37         31AH800-57         41AH800-31,8         √           27,2         38,1         21AH800-38,1         31AH800-38,1         41AH800-38,1         √           28         30         21AH800-38         31AH800-38         41AH800-38         √           28         50         21AH800-42         31AH800-43         41AH800-42         2           28         50         21AH800-43         31AH800-43         41AH800-43           30         35<						
26.7         38,1         21AH200-38,1         31AH200-38,1         41AH200-38,1           26.9         28,5         21AHB00-28A         31AHB00-28A         41AHB00-28,A         ✓           26.9         28,5         21AHB00-28,A         31AHB00-28,A         41AHB00-28,A         ✓           26.9         39         21AHB00-38         31AHB00-38         41AHB00-38.         ✓           26.9         40,35         21AHB00-35         31AHB00-38         41AHB00-38.         ✓           27.2         28,6         21AHB00-38,1         31AHB00-38.         41AHB00-38,1         ✓           27.2         38,1         21AHB00-31,8A         31AHB00-37.         41AHB00-38,1         ✓           28         37         21AHM00-31,8A         31AHM00-37.         41AHB00-38,1         ✓           28         50         21AHM00-50         31AHM00-50         41AHM00-30.         ✓           28         50         21AHM00-50         31AHM00-50         41AHM00-38.         ✓           29         50         21AHM00-50         31AHM00-50         41AHM00-50         ✓           29         50         21AHM00-50         31AHM00-50         41AHM00-38.         ✓           30         38			SATFX-52	SATFX-76	SATFX-115	SSEDX
26.7         38,1         21AH200-38,1         31AH200-38,1         41AH200-38,1           26.9         28,5         21AHB00-28A         31AHB00-28A         41AHB00-28,A         ✓           26.9         28,5         21AHB00-28,A         31AHB00-28,A         41AHB00-28,A         ✓           26.9         39         21AHB00-38         31AHB00-38         41AHB00-38.         ✓           26.9         40,35         21AHB00-35         31AHB00-38         41AHB00-38.         ✓           27.2         28,6         21AHB00-38,1         31AHB00-38.         41AHB00-38,1         ✓           27.2         38,1         21AHB00-31,8A         31AHB00-37.         41AHB00-38,1         ✓           28         37         21AHM00-31,8A         31AHM00-37.         41AHB00-38,1         ✓           28         50         21AHM00-50         31AHM00-50         41AHM00-30.         ✓           28         50         21AHM00-50         31AHM00-50         41AHM00-38.         ✓           29         50         21AHM00-50         31AHM00-50         41AHM00-50         ✓           29         50         21AHM00-50         31AHM00-50         41AHM00-38.         ✓           30         38	26,7	38	21AHZ00-38	31AHZ00-38	41AHZ00-38	
26.9       28.5       21ABO-28.5A       31ABO-28.5A       41ABO-28.5A       √         26.9       29       21ABO-29A       31ABO-29A       41ABO-29A       √         26.9       38       21ABO-38       31ABO-35       41ABO-38       ✓         26.9       40.35       21ABO-35       31ABO-35       41ABO-40.35       ✓         27.2       28.6       21ABO-38,1       31ABO-37,4       41ABO-37,7       ✓         27.2       28.6       21AHO0-38,1       31ABO-37,4       41AHOO-38,A       ✓         28       31.8       21AMO-37,7       31ABO-37,4       41AHOO-31,A       ✓         28       31.7       21AIMO-37       31AIMO-37,4       41AIMO-37,4       ✓         28       50       21AIMO-42       31AIMO-42       41AIMO-50       ✓         29       50       21AIMO-80       31AIMO-50       41AIMO-50       ✓         29       50       21AIMO-80       31AIMO-60       41AIMO-50       ✓         30       35       21AKO0-35,A       31AKO0-35,A       41AKO0-38       ✓         31,75       21AKO0-48       31AIKO-35,A       41AKO0-38       ✓         31,75       21AKO0-43       31AKO-35,A		38,1	21AHZ00-38,1	31AHZ00-38,1	41AHZ00-38,1	
26.9       29       21AB00-29A       31AB00-29A       41AB00-29A       √         26.9       38       21AB00-38       31AB00-38       41AB00-33       41AB00-35         26.9       40.35       21AB00-40.35       31AB00-40.35       41AB00-40.35         27.2       28.6       21AB00-28.6A       31AB00-28.6A       41AB00-28.6A       √         27.2       28.1       21AB00-31.8A       31AB00-37       41AB00-38.1       √         28       31.8       21AB00-37       31AB00-37       41AB00-38.1       √         28       31.8       21AB00-37       31AB00-37       41AB00-38.1       √         28       80       21AIM00-31.8A       31AIM00-37       41AB00-37       √         28       80       21AIM00-50       31AIM00-30       41AIM00-30       √         29       50       21AIM00-50       31AIM0-50       41AIM00-80       √         29       50       21AIM00-38       31AIG0-38.4       41AG00-38.4       √         30       33       21AIG00-38.5       31AIG0-45       41AIM00-37.6       √         31.75       47.63       21AIX00-45       31AIAG0-45       41AIA00-45       √         31.75       21AK00-43<	26,9	28	21AIB00-28A	31AIB00-28A	41AIB00-28A	√
26.9         38         21.41800-38         31.41800-40,35         41.41800-40,35           26.9         57         21.14800-53         31.41800-57         41.41800-57           27.2         28.6         21.41800-38,1         31.41800-38,1         41.41800-28,6A         41.41800-38,1           27.2         38.1         21.41800-38,1         31.41800-38,1         41.41800-38,1         √           27.2         38.1         21.41800-31,8A         31.41800-31,8A         41.41800-31,8A         √           28         3.1.8         21.41800-42         31.41800-32,0A         41.41800-42         √           28         50         21.41800-42         31.41800-50         41.41800-50         41.41800-50           28         50         21.41800-40         31.41800-50         41.41800-50         41.41800-50           29         50         21.41800-50         31.41800-53         41.41800-53         41.41800-50           30         35         21.41800-45         31.41600-38         41.41800-38         41.41800-38           30         45         21.41800-45         31.41600-38         41.41800-38         41.41800-38           31.7         47.63         21.41800-38         31.41800-38         41.41800-38         4		28,5	21AIB00-28,5A	31AIB00-28,5A	41AIB00-28,5A	1
26.9         38         21.41800-38         31.41800-40,35         41.41800-40,35           26.9         57         21.14800-53         31.41800-57         41.41800-57           27.2         28.6         21.41800-38,1         31.41800-38,1         41.41800-28,6A         41.41800-38,1           27.2         38.1         21.41800-38,1         31.41800-38,1         41.41800-38,1         √           27.2         38.1         21.41800-31,8A         31.41800-31,8A         41.41800-31,8A         √           28         3.1.8         21.41800-42         31.41800-32,0A         41.41800-42         √           28         50         21.41800-42         31.41800-50         41.41800-50         41.41800-50           28         50         21.41800-40         31.41800-50         41.41800-50         41.41800-50           29         50         21.41800-50         31.41800-53         41.41800-53         41.41800-50           30         35         21.41800-45         31.41600-38         41.41800-38         41.41800-38           30         45         21.41800-45         31.41600-38         41.41800-38         41.41800-38           31.7         47.63         21.41800-38         31.41800-38         41.41800-38         4	-	1.00	21AIB00-29A	31AIB00-29A	41AIB00-29A	1
26.9         40,35         21.41800-40,35         31.41800-40,35         41.41800-35           26.9         57         21.41800-57         31.41800-57         41.41800-35           27.2         28.6         21.41800-38,1         31.41800-38,1         41.41800-31,84           27.2         38.1         21.41800-31,8A         31.41800-31,8A         41.41800-31,8A           28         37         21.41800-42         31.41800-42         41.41800-37           28         50         21.41800-42         31.41800-42         41.41800-80           28         80         21.41800-40         31.41800-43         41.41800-80           29         50         21.41800-50         31.41800-50         41.41800-80           29         60         21.41800-40         31.41800-50         41.41800-80           30         33.5         21.41800-43         31.41800-43         41.41800-43           30         45         21.41800-43         31.41800-43         41.41800-45           31.75         47.63         21.41800-43         31.41800-43         41.41800-43           32         43         21.41800-43         31.41800-43         41.41800-43           32         43         21.418400-43         31.41800-		38	21AIB00-38		CONTRACTOR DATA DATA DATA DATA DATA DATA DATA DAT	
27,2       28,6       21AIE00-28,6A       31AIE00-28,6A       41AIE00-28,6A       √         27,2       38,1       21AIE00-38,1       31AIE00-38,1       41AIE00-38,1       √         28       31,8       21AIM00-37       31AIM00-37       41AIM00-31,8A       √         28       37       21AIM00-42       31AIM00-42       41AIM00-37       √         28       50       21AIM00-50       31AIM00-42       41AIM00-50       6         28       80       21AIM00-50       31AIM00-50       41AIM00-50       6         29       60       21AIW00-60       31AIM00-50       41AIM00-60       6         30       33,5       21AIG00-38       31AIG00-33       41AIG00-38,4       √         31,75       47,63       21AIX00-45       31AIG00-35,A       41AIG00-45       41AIX00-43         31,75       47,63       21AIX00-45       31AIK00-35A       41AIX00-43       √         32       43       21AK00-43       31AK00-43       41AK00-43       41AIX00-43         32       48       21AK00-45       31AIK00-49,5       41AIK00-49,5       41AIX00-43         33       49,5       21AK00-43       31AK00-38,A       41AKK00-49,5       41AIX00-43,1A		40,35	21AIB00-40,35	31AIB00-40,35	41AIB00-40,35	
27,2       38,1       21AIE00-38,1       31AIE00-38,1       41AIE00-38,1         28       31,8       21AIM00-31,8A       31AIM00-31,8A       41AIM00-37,4         28       37       21AIM00-42       31AIM00-37       41AIM00-37,4         28       42       21AIM00-50       31AIM00-50       41AIM00-42         28       80       21AIM00-60       31AIM00-50       41AIM00-80         29       50       21AIW00-60       31AIM00-60       41AIW00-60         30       33,5       21AIG00-38,A       31AIG00-33,A       41AIG00-33,5A         30       38       21AIW00-60       31AIW0-60       41AIW0-60         31,75       47,63       21AIK00-43       31AIG00-45       41AIG00-38         31,75       47,63       21AIK00-45       31AIG00-45       41AIG00-38         31,75       47,63       21AIK00-47,63       31AIK00-43       41AK00-43         31,75       47,63       21AIK00-48       31AIK00-43       41AK00-43         32       48       21AK00-45       31AIK00-49,5       41AIK00-45         33       49,5       21AIK00-45       31AIK00-49,5       41AIK00-48         33       49,5       21AIK00-48       31AIK00-38,A       4	26,9	57	21AIB00-57	31AIB00-57	41AIB00-57	
28         31,8         21AIM00-31,8A         31AIM00-31,8A         41AIM00-31,8A         √           28         42         21AIM00-37         31AIM00-37         41AIM00-37         41AIM00-37           28         42         21AIM00-50         31AIM00-42         41AIM00-42         41AIM00-80           28         50         21AIM00-50         31AIM00-50         41AIM00-80         41AIM00-80           29         50         21AIM00-60         31AIM00-60         41AIM00-60         41AIM00-60           30         33         21AIG00-33,5A         31AIG00-38         41AIG00-38         √           30         45         21AIG00-45         31AIG0-45         41AIG00-45         31AIG0-45           31/5         21AX0147,63         31AIG0-45         41AIG0-45         41AIG0-45           31,75         47,63         21AIX00-43         31AIX0-43         41AK00-45           32         43         21AK00-45         31AK00-43         41AK00-48           33         45         21AK00-45         31AK00-45         41AK00-48           33         45         21AK00-45         31AK00-45         41AK00-48           33         45         21AK00-45         31AK00-46         41AK000-38,1A	27,2	28,6	21AIE00-28,6A	31AIE00-28,6A	41AIE00-28,6A	1
28         37         21AIM00-37         31AIM00-37         41AIM00-37           28         42         21AIM00-42         31AIM00-42         41AIM00-42           28         50         21AIM00-50         31AIM00-50         41AIM00-42           28         80         21AIM00-50         31AIM00-80         41AIM00-80           29         50         21AIM00-50         31AIM00-80         41AIM00-80           29         60         21AIM00-33,5A         31AIM00-60         41AIW00-50           30         33,5         21AIG00-33,5A         31AIG00-33,5A         41AIG00-33,5A           30         38         21AIG00-35,5A         31AIG00-38         41AIG00-38           31,75         47,63         21AIX01-47,63         31AIX01-47,63         41AIX01-47,63           31,75         47,63         21AIX01-47,63         31AK00-48         41AK00-43           32         48         21AK00-48         31AK00-43         41AK00-43           33         45         21AK00-48         31AK00-43         41AK00-43           33         45         21AK00-48         31AK00-43         41AK00-43           33         45         21AK00-48         31AK00-43           33	12101241200	38,1	21AIE00-38,1	31AIE00-38,1	41AIE00-38,1	
28         42         21AIM00-42         31AIM00-42         41AIM00-42           28         50         21AIM00-50         31AIM00-50         41AIM00-50           28         80         21AIM00-50         31AIM00-80         41AIM00-80           29         50         21AIW00-50         31AIW00-50         41AIW00-50           30         33,5         21AIW00-60         31AW00-60         41AW00-60           30         38         21AIG00-33,5A         31AIG00-33         41AIG00-33,5A           30         38         21AIG00-33         31AIG00-33         41AIG00-45           31,75         47,63         21AIX01-47,63         31AIX01-47,63         41AIX01-47,63           32         35         21AK00-45         31AK00-35A         41AKA00-45           31,75         47,63         21AK00-45         31AK00-43         41AKA00-43           33         45         21AK00-45         31AK00-45         41AK00-48           33         49,5         21AK00-45         31AK00-48         41AK00-48           33,4         38,1         21AK00-38,1A         31AK00-38,1A         41AK00-38,1A         √           33,7         50,55         21AK00-38,1A         31AK00-38,1A         √	28	31,8	21AIM00-31,8A	31AIM00-31,8A	41AIM00-31,8A	√
28         50         21AIM00-50         31AIM00-50         41AIM00-50           28         80         21AIM00-80         31AIM00-80         41AIM00-80           29         50         21AW00-50         31AW00-50         41AIW00-50           29         60         21AW00-60         31AW00-60         41AIW00-60           30         33,5         21A/G00-33,5A         31A/G00-33,5A         41A/G00-33,5A           30         45         21A/G00-45         31A/G00-45         41A/G00-33,5A           31,75         47,63         21A/G00-45         31A/G00-45         41A/X00-45           31,75         47,63         21A/K00-45         31A/K00-43         41A/X00-45           31,75         47,63         21A/K00-43         31A/K00-43         41A/X00-43           31,75         47,63         21A/K00-43         31A/K00-43         41A/X00-43           31,75         47,63         21A/K00-45         31A/K00-43         41A/X00-48           33         49,5         21A/K00-49,5         31A/K00-49,5         41A/K00-48           33         49,5         21A/K00-38,A         31A/K00-38,A         41A/K00-38,IA         √           33,4         38         21A/K00-38,A         31A/K00-38,A	28	1. State of the	21AIM00-37	31AIM00-37	41AIM00-37	
28         80         21AIW00-80         31AIW00-80         41AIW00-80           29         50         21AIW00-50         31AW00-50         41AIW00-50           29         60         21AIW00-60         31AW00-60         41AIW00-60           30         33,5         21AIG0-33,5A         31AIG00-33,5A         41AIG00-33,5A         ✓           30         38         21AIG00-38         31AIG00-35,5A         41AIG00-38         ✓           31,75         47,63         21AIX01-47,63         31AIX01-47,63         41AIX00-47,63           31,75         47,63         21AKA00-35A         31AKA00-35A         41AIX00-47,63           32         43         21AKA00-43         31AKA00-43         41AKA00-48           33         45         21AKK00-45         31AKA00-43         41AKA00-45           33         49,5         21AKK00-49,5         31AKA00-43         41AKA00-48           33,4         50         21AKK00-49,5         31AKA00-43         41AK00-38,1A           34,4         51         21AK00-38,1A         31AK000-38,1A         41AK00-38,1A         √           33,7         72         21AK00-38,1A         31AK000-38,1A         41AK00-38,1A         √           33,7	28	42	21AIM00-42	31AIM00-42	41AIM00-42	
29         50         21AIW00-50         31AIW00-50         41AIW00-50           29         60         21AIW00-60         31AIW00-60         41AIW00-50           30         33,5         21AIG00-33,5A         31AIG00-33,5A         41AIG00-33,5A           30         38         21AIG00-38         31AIG00-38         41AIG00-38           30         45         21AIG00-45         31AIG00-45         41AIG00-45           31/75         47,63         21AIX01-47,63         31AIX00-45         41AIX00-45           31/75         47,63         21AIX00-45         31AIX00-35A         41AIX00-45           32         43         21AKA00-35A         31AIX00-48         41AKA00-43           31         45         21AKK00-45         31AK00-48         41AKA00-48           33         45         21AKK00-45         31AKK00-49,5         41AKK00-49,5           33         49,5         21AKK00-49,5         31AKK00-49,5         41AKK00-49,5           33,4         38,1         21AK00-38,1A         31AK00-38,1A         41AK00-38,1A         √           33,7         50,55         21AK00-38,1A         31AK00-55,5         41AK00-38,1A         √           33,7         72         21AK00-55,5	28	50	21AIM00-50	31AIM00-50	41AIM00-50	
29         60         21AIW00-60         31AIW00-60         41AIW00-60           30         33,5         21AIG00-33,5A         31AIG00-33,5A         41AIG00-33,5A         ✓           30         38         21AJG00-38         31AJG00-38         41AJG00-38         ✓           30         45         21AJG00-45         31AJG00-45         41AJG00-45            31,75         47,63         21AJK00-45         31AJK01-47,63         41AJK00-45            31,75         47,63         21AJKA00-35A         31AJKA00-35A         41AKA00-45            32         48         21AKA00-48         31AKA00-48         41AKA00-48            33         45         21AKK00-49,5         31AKK00-49,5         41AKK00-49,5            33,4         9,5         21AKK00-49,5         31AKK00-49,5         41AKK00-48,5            33,4         38,1         21AKK00-38,1A         31AKC00-38,1A         41AK00-38,1A         ✓           33,7         38         21AKK00-38,A         31AKC00-38,A         41AK00-38,A         ✓           33,7         72         21AKR00-72         31AKR00-38,A         41AK00-38,A         ✓           33,7         72	28	80	21AIM00-80	31AIM00-80	41AIM00-80	
30       33,5       21A/G00-33,5A       31A/G00-33,5A       41A/G00-38,5A         30       38       21A/G00-38       31A/G00-38       41A/G00-38         30       45       21A/G00-45       31A/G00-45       41A/G00-45         31,75       47,63       21A/X01-47,63       31A/X01-47,63       41A/X01-47,63         32       35       21AKA00-35A       31A/X01-47,63       41A/X00-47,63         32       43       21AKA00-43       31A/X01-47,63       41A/X00-48         33       45       21A/K00-45       31A/K00-48       41A/X00-48         33       49,5       21A/K00-45       31A/K00-45       41A/K00-48         33       49,5       21A/K00-49,5       31A/K00-49,5       41A/K00-48         33,4       38,1       21A/K00-38,1A       31A/K00-38,1A       41A/K00-38,1A       √         33,4       38,1       21A/K00-38,1A       31A/K00-38,1A       41A/K00-38,1A       √         33,7       38       21A/K00-38,A       31A/K00-38,A       41A/K00-38,A       √         33,7       72       21A/K00-50,55       31A/K00-50,55       41A/K00-51,55       41A/K00-51,55         33,7       72       21A/K00-51       31A/K00-51,41/K00-52,5       41A/K00-52,5 </td <td>29</td> <td>50</td> <td>21AIW00-50</td> <td>31AIW00-50</td> <td>41AIW00-50</td> <td></td>	29	50	21AIW00-50	31AIW00-50	41AIW00-50	
30         33,5         21A/G00-33,5A         31A/G00-33,5A         41A/G00-33,5A         √           30         38         21A/G00-38         31A/G00-38         41A/G00-38         41A/G00-38           30         45         21A/G00-45         31A/G0-45         41A/G00-45         41A/G00-45           31,75         47,63         21A/X01-47,63         31A/X01-47,63         41A/X01-47,63         41A/X01-47,63           32         35         21AKA00-35A         31A/X01-47,63         41A/X00-47,63         41A/X00-43           32         48         21AKA00-48         31A/K00-48         41A/X00-43         41A/X00-43           33         45         21A/K00-45         31A/K00-45         41A/K00-45         41A/K00-45           33         49,5         21A/K00-49,5         31A/K00-90         41A/K00-48,1A         41A/K00-48,1A           34         38,1         21A/K00-38,1A         31A/K00-38,A         41A/K00-38,A         √           33,4         38,1         21A/K00-38,A         31A/K00-38,A         41A/K00-38,A         √           33,4         38,1         21A/K00-38,A         31A/K00-38,A         41A/K00-38,A         √           33,7         38         21A/K00-38,A         31A/K00-38,A         4	29	60		31AIW00-60		
30         38         21AJG00-38         31AJG00-38         41AJG00-38           30         45         21AJG00-45         31AJG00-45         41AJG00-45           31,75         47,63         21AJX01-47,63         31AIXA00-35A         41AJX01-47,63           32         35         21AKA00-35A         31AXA00-35A         41AKA00-35A         ✓           32         43         21AKA00-48         31AKA00-43         41AKA00-43           33         45         21AKK00-45         31AKK00-45         41AKK00-48           33         45         21AKK00-45         31AKK00-49,5         41AKK00-49,5           334         95         21AKK00-49,5         31AKK00-49,5         41AKK00-49,5           334         38,1         21AKK00-38,1A         31AKK00-38,1A         41AKK00-38,1A           33,4         38,1         21AKC00-38,A         31AKK00-38,A         41AKR00-38,A           33,7         38         21AKC00-38,A         31AKK00-38,A         41AKR00-38,A         √           33,7         72         21AKR00-50,55         31AKR00-72         41AKR00-50,55         33           34         38,1         21AKU00-51         31AKU0-51         41AKU00-51         √           34 <td< td=""><td>200000000</td><td></td><td>1</td><td></td><td></td><td>√</td></td<>	200000000		1			√
30         45         21AJG00-45         31AJG00-45         41AJG00-45           31,75         47,63         21AJK01-47,63         31AJK01-47,63         41AJK01-47,63           32         35         21AKA00-35A         31AKA00-35A         41AKA00-35A         ✓           32         43         21AKA00-43         31AKA00-48         41AKA00-48         41AKA00-48           33         45         21AKK00-49         31AKA00-48         41AKA00-48         41AKK00-49,5           33         49,5         21AKK00-49,5         31AKK00-49,5         41AKK00-49,5         41AKK00-49,5           33,4         90         21AKK00-90         31AKK00-38,1A         41AKK00-38,1A         √           33,4         38,1         21AK000-38,1A         31AK000-38,1A         41AK000-38,A         √           33,4         38,1         21AK000-38,1A         31AK000-38,A         41AK00-38,A         √           33,7         38         21AK000-38,A         31AK000-38,A         41AKR00-50,55         41AKR00-50,55           33,7         72         21AKR00-72         31AKR00-72         41AKR00-51,55         41AKR00-51,55           34         55         21AKU00-55         31ALK00-55         41ALKU00-55,5         41AKU00-55,5 <td></td> <td>1000</td> <td></td> <td></td> <td></td> <td></td>		1000				
31,75       47,63       21AJX01-47,63       31AJX01-47,63       41AJX01-47,63         32       35       21AKA00-35A       31AKA00-35A       41AKA00-35A       ✓         32       43       21AKA00-43       31AKA00-43       41AKA00-43       4         32       48       21AKA00-48       31AKA00-43       41AKA00-43       4         33       45       21AKK00-45       31AKA00-45       41AKA00-45       4         33       49,5       21AKK00-49,5       31AKA00-48       41AKA00-49,5       4         33,4       90       21AKK00-49,5       31AKK00-49,5       41AKK00-49,5       4         33,4       38,1       21AK000-38,1A       31AK00-38,1A       41AK00-38,1A       √         33,4       38,1       21AK00-38A       31AK00-38A       41AK00-38A       √         33,7       38       21AK00-38A       31AKR00-38A       41AK00-38A       √         33,7       72       21AKR00-72       31AKR00-38,1A       41AK00-38,1A       √         33,7       72       21AK00-55       31AK00-55       41AK00-51       41AK00-51         34       51       21AK00-55       31ALE00-50       41ALE00-50       41ALE00-50       41AK000-53		210 Soley				
32       35       21AKA00-35A       31AKA00-35A       41AKA00-35A       ✓         32       43       21AKA00-43       31AKA00-43       41AKA00-43         32       48       21AKA00-48       31AKA00-48       41AKA00-43         33       45       21AKK00-49,5       31AKK00-49,5       41AKK00-49,5         33       49,5       21AKK00-49,5       31AKK00-49,5       41AKK00-49,5         33,4       38,1       21AKK00-38,1A       31AKK00-38,1A       41AK000-38,1A       √         33,4       38,1       21AKK00-38,1A       31AK000-38,1A       41AK000-38,1A       √         33,7       38       21AKR00-38,A       31AKR00-38,A       41AK000-38,A       √         33,7       38       21AKR00-72       31AKR00-38,A       41AK000-38,A       √         33,7       72       21AKR00-72       31AKR00-51       41AK000-38,1A       √         34       51       21AK00-55       31AK00-55       41AK000-38,1A       √         34       51       21AK00-55       31AK00-55       41AK00-55       5         35       50       21AL00-55       31AK00-55       41AK00-55       5         35       57       21AL00-55       31AL00-55	31.75	47.63				
32       43       21AKA00-43       31AKA00-43       41AKA00-43         32       48       21AKA00-48       31AKA00-48       41AKA00-48         33       45       21AKK00-45       31AKK00-45       41AKK00-45         33       49,5       21AKK00-9,5       31AKK00-49,5       41AKK00-49,5         33,4       90       21AKK00-90       31AKK00-90       41AKK00-49,5         33,4       25,4						
32       48       21AKA00-48       31AKA00-48       41AKA00-48         33       45       21AKK00-45       31AKK00-49,5       41AKK00-49,5         33       49,5       21AKK00-49,5       31AKK00-49,5       41AKK00-49,5         33,4       90       21AKK00-39,5       31AKK00-49,5       41AKK00-49,5         33,4       25,4       21       20       20         33,4       38,1       21AK000-38,1A       31AK000-38,1A       41AK000-38,1A       √         33,4       38       21AK000-38,A       31AK000-38,A       41AK000-38,A       √         33,7       38       21AK000-38,A       31AK00-38,A       41AK000-38,A       √         33,7       38       21AK00-50,55       31AK00-72       41AK00-38,A       √         33,7       72       21AK00-72       31AK00-72       41AK00-38,A       √         34       51       21AK00-55       31AK00-55       41AK00-51       41AK00-51         34       55       21AK00-55       31ALE00-55       41ALE00-50       41ALE00-50         35       50       21ALE00-55       31ALE00-55       41ALE00-55       41ALE00-55         35       50       21ALE00-70       31ALE00-55       41ALE0						
33       45       21AKK00-45       31AKK00-45       41AKK00-45         33       49,5       21AKK00-49,5       31AKK00-49,5       41AKK00-49,5         33       90       21AKK00-90       31AKK00-90       41AKK00-90         33,4       25,4       21AKK00-38,1A       31AKK00-38,1A       41AKK00-38,1A       √         33,4       38,1       21AKR00-38,1A       31AK000-38,A       41AKR00-38,A       √         33,7       38       21AKR00-38A       31AKR00-38A       41AKR00-38,A       √         33,7       38       21AKR00-38,A       31AKR00-38,A       41AKR00-38,A       √         33,7       38       21AKR00-55       31AKR00-38,A       41AKR00-38,A       √         33,7       72       21AKR00-72       31AKR00-72       41AKR00-38,A       √         34       38,1       21AKU00-51       31AKU00-51       41AKU00-51       √         34       55       21AKU00-55       31AKU00-55       41AKU00-50       √         35       50       21ALE00-50       31ALE00-50       41ALE00-50       √         35       51       21ALE00-55       31ALE00-55       41ALE00-50       √         35       52,5       21ALE00-50						
33       49,5       21AKK00-49,5       31AKK00-49,5       41AKK00-49,5         33       90       21AKK00-90       31AKK00-90       41AKK00-90         33,4       25,4       20       20         33,4       25,4       21AKK00-38,1A       31AK000-38,1A       41AK000-38,1A       √         33,4       38       21AKR00-38,A       31AK000-38,A       41AK000-38,A       √         33,7       38       21AKR00-38A       31AK000-38,A       41AK000-38,A       √         33,7       38       21AKR00-50,55       31AKR00-50,55       41AKR00-38,A       √         33,7       50,55       21AKR00-72       31AK000-50,55       41AK00-38,1A       √         34       38,1       21AKU00-38,1A       31AKU00-51       41AKU00-38,1A       √         34       51       21AKU00-55       31AKU00-55       41AKU00-51       √         34       51       21AKU00-55       31ALE00-50       41ALE00-50       √         35       50       21ALE00-50       31ALE00-50       41ALE00-50       √         35       52,5       21ALE00-52,5       31ALE00-50       41ALE00-70         38       45       21AMI00-55       31AMI00-55       41ALE00-50 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
33       90       21AKK00-90       31AKK00-90       41AKK00-90         33,4       25,4       2000       2000       2000       2000         33,4       38,1       21AK000-38,1A       31AK000-38,1A       41AK000-38,1A       √         33,4       38       21AK000-38,A       31AK000-38,A       41AK000-38,A       √         33,7       38       21AKR00-38,A       31AK00-38,A       41AK00-38,A       √         33,7       38       21AKR00-50,55       31AK00-38,A       41AK00-38,A       √         33,7       50,55       21AKR00-50,55       31AK00-38,A       41AK00-38,A       √         34       31,2       21AKU00-38,1A       31AK00-38,IA       41AK00-38,IA       √         34       51       21AKU00-38,1A       31AKU00-38,IA       41AKU00-38,IA       √         34       51       21AKU00-55       31AKU00-55       41AKU00-51         35       50       21ALE00-50       31ALE00-50       41ALE00-52,5         35       55       21ALE00-55       31ALE00-55       41ALE00-52,5         35       57       21ALE00-55       31ALE00-50       41ALE00-52,5         38       52       21AMI00-45       31AMI00-45       41AM						
33,4         25,4         21AK000-38,1A         31AK000-38,1A         41AK000-38,1A         √           33,4         38         21AK000-38A         31AK000-38A         41AK000-38A         √           33,7         38         21AK00-38A         31AK000-38A         41AK000-38A         √           33,7         38         21AKR00-50,55         31AKR00-50,55         41AKR00-38A         √           33,7         50,55         21AKR00-72         31AKR00-72         41AKR00-72         41AKR00-72           34         38,1         21AKU00-38,1A         31AKU00-38,1A         41AKU00-38,1A         √           34         38,1         21AKU00-51         31AKU00-55         41AKU00-51         √           34         51         21AKU00-55         31AKU00-55         41AKU00-51         √           35         50         21ALE00-50         31ALE00-50         41ALE00-50         √           35         52,5         21ALE00-55         31ALE00-52,5         41ALE00-52,5         √           38         45         21AMI00-45         31AMI00-45         41AMI00-45         √           38         52         21AMI00-52         31ALE00-52,5         41ALE00-52         √           38				2		
33,4       38,1       21AK000-38,1A       31AK000-38,1A       41AK000-38,1A       √         33,4       38       21AK000-38A       31AK000-38A       41AK000-38A       √         33,7       38       21AKR00-38A       31AKR00-38A       41AK000-38A       √         33,7       38       21AKR00-50,55       31AKR00-50,55       41AKR00-38A       √         33,7       50,55       21AKR00-72       31AKR00-72       41AKR00-50,55       41AKR00-50,55         33,7       72       21AKR00-72       31AKR00-72       41AKR00-50,55       41AK00-51         34       38,1       21AKU00-38,1A       31AKU00-51       41AKU00-51       √         34       51       21AKU00-55       31AKU00-55       41AKU00-55         35       50       21ALE00-50       31ALE00-50       41ALE00-50         35       55       21ALE00-52,5       31ALE00-55       41ALE00-52         35       50       21ALE00-52       31ALE00-50       41ALE00-52         38       45       21AMI00-45       31AMI00-45       41AMI00-45         38       52       21AMI00-57       31AMI00-57       41ALE00-70         38       52       21AMI00-57,2       31AMI00-57,2       41		2523.22				
33,4       38       21AK000-38A       31AK000-38A       41AK000-38A       √         33,7       38       21AKR00-38A       31AKR00-38A       41AKR00-38A       √         33,7       50,55       21AKR00-50,55       31AKR00-50,55       41AKR00-38A       √         33,7       72       21AKR00-72       31AKR00-72       41AKR00-72       41AKR00-72         34       38,1       21AKU00-38,1A       31AKU00-38,1A       41AKU00-38,1A       √         34       51       21AKU00-51       31AKU00-51       41AKU00-38,1A       √         34       51       21AKU00-55       31AKU00-55       41AKU00-51       √         34       55       21ALE00-50       31ALE00-50       41ALE00-50       √         35       50       21ALE00-50       31ALE00-52,5       41ALE00-50       √         35       52,5       21ALE00-70       31ALE00-52,5       41ALE00-50       √         38       45       21AMI00-45       31AMI00-45       41ALE00-70       √         38       52       21AMI00-57       31AMI00-52       41ALE00-70       √         38       57       21AMI00-57       31AMI00-56       41AMI00-57       √         38			21AKO00-38,1A	31AKO00-38,1A	41AKO00-38,1A	√
33,7         38         21AKR00-38A         31AKR00-38A         41AKR00-38A         √           33,7         50,55         21AKR00-50,55         31AKR00-50,55         41AKR00-50,55         41AKR00-72           34,         38,1         21AKR00-72         31AKR00-72         41AKR00-72         41AKR00-72           34         38,1         21AKU00-38,1A         31AKU00-38,1A         41AKU00-38,1A         √           34         51         21AKU00-55         31AKU00-55         41AKU00-51         √           34         55         21AKU00-55         31AKU00-55         41AKU00-51         √           34         55         21ALE00-50         31ALE00-50         41ALE00-50         √           35         50         21ALE00-52,5         31ALE00-52         41ALE00-52,5         √           35         55         21ALE00-70         31ALE00-70         41ALE00-70         √           38         45         21AMI00-45         31AMI00-45         41AMI00-45         √           38         52         21AMI00-52         31AMI00-57         41AMI00-57         √           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2         √         √ <t< td=""><td></td><td></td><td></td><td></td><td></td><td>10</td></t<>						10
33,7         50,55         21AKR00-50,55         31AKR00-50,55         41AKR00-50,55           33,7         72         21AKR00-72         31AKR00-72         41AKR00-72           34         38,1         21AKU00-38,1A         31AKU00-38,1A         41AKU00-38,1A         √           34         51         21AKU00-51         31AKU00-38,1A         41AKU00-38,1A         √           34         51         21AKU00-55         31AKU00-55         41AKU00-51         √           34         55         21ALE00-50         31ALE00-50         41ALE00-50         √           35         50         21ALE00-52,5         31ALE00-52,5         41ALE00-50         √           35         52,5         21ALE00-52,5         31ALE00-52,5         41ALE00-52,5         √           36         52         21ALE00-70         31ALE00-70         41ALE00-70         √           38         52         21AMI00-45         31AMI00-45         41AMI00-45         √           38         52         21AMI00-57         31ALE00-70         41ALE00-70         √           38         52         21AMI00-57         31AMI00-57         41AMI00-57         √           38         57,2         21AMI00-57,2 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
33,7       72       21AKR00-72       31AKR00-72       41AKR00-72         34       38,1       21AKU00-38,1A       31AKU00-38,1A       41AKU00-38,1A       √         34       51       21AKU00-51       31AKU00-51       41AKU00-51       √         34       55       21AKU00-55       31AKU00-55       41AKU00-51       √         34       55       21AKU00-55       31ALE00-50       41ALE00-50       √         35       50       21ALE00-50       31ALE00-50       41ALE00-50       √         35       52,5       21ALE00-52,5       31ALE00-55       41ALE00-52,5       √         35       55       21ALE00-70       31ALE00-70       41ALE00-70       √         38       55       21AMI00-45       31AMI00-45       41AMI00-45       √         38       52       21AMI00-52       31AMI00-52       41AMI00-52       √         38       52       21AMI00-57       31AMI00-57       41AMI00-57       √         38       52       21AMI00-57       31AMI00-57       41AMI00-57       √         38       57       21AMI00-57       31AMI00-57       41AMI00-57       √         38       57,2       21AMI00-57,2	100.000	20272000	21AKR00-50,55	31AKR00-50,55	41AKR00-50,55	
34         38,1         21AKU00-38,1A         31AKU00-38,1A         41AKU00-38,1A         √           34         51         21AKU00-51         31AKU00-51         41AKU00-38,1A         √           34         55         21AKU00-55         31AKU00-55         41AKU00-55         41AKU00-55           35         50         21ALE00-50         31ALE00-50         41ALE00-50         41ALE00-50           35         52,5         21ALE00-52,5         31ALE00-55,5         41ALE00-52,5         41ALE00-52,5           35         55         21ALE00-52,5         31ALE00-55         41ALE00-52,5         41ALE00-52,5           35         55         21ALE00-70         31ALE00-52         41ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-52         41AMI00-55         41AMI00-45           38         52         21AMI00-57         31AMI00-57         41AMI00-57         41AMI00-57           38         56         21AMI00-57         31AMI00-57         41AMI00-57,2         41AMI00-57,2           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2         41AMI00-57,2           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMI00-50<	-	3.70				
34         51         21AKU00-51         31AKU00-51         41AKU00-51           34         55         21AKU00-55         31AKU00-55         41AKU00-55           35         50         21ALE00-50         31ALE00-50         41ALE00-50           35         52,5         21ALE00-52,5         31ALE00-52,5         41ALE00-52,5           35         55         21ALE00-52,5         31ALE00-55         41ALE00-55           35         55         21ALE00-70         31ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-52         41AMI00-45           38         52         21AMI00-52         31AMI00-52         41AMI00-45           38         52         21AMI00-57         31AMI00-57         41AMI00-57           38         56         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38,1         50         21AMI00-57,15         31AMI00-50         41AMI00-57,15           38,1         50         21AMI00-57,15         31AMI00-50         41AMI00-57,15		38,1	21AKU00-38.1A	31AKU00-38.1A	41AKU00-38.1A	√
34         55         21AKU00-55         31AKU00-55         41AKU00-55           35         50         21ALE00-50         31ALE00-50         41ALE00-50           35         52,5         21ALE00-52,5         31ALE00-52,5         41ALE00-52,5           35         55         21ALE00-55         31ALE00-55         41ALE00-55           35         55         21ALE00-70         31ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-45         41AMI00-45           38         52         21AMI00-57         31AMI00-52         41AMI00-57           38         56         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38,1         105         21AMI00-57         31AMI00-45         41AMI00-45           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMI00-57,15           38,1         57,2         21AMI00-57,2         31AMI00-57,15         41AMI00-57,15		1.010				
35         50         21ALE00-50         31ALE00-50         41ALE00-50           35         52,5         21ALE00-52,5         31ALE00-52,5         41ALE00-52,5           35         55         21ALE00-55         31ALE00-55         41ALE00-55           35         55         21ALE00-70         31ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-52         41AMI00-52           38         56         21AMI00-57         31AMI00-57         41AMI00-57           38         56         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-45         31AMI00-45         41AMI00-45           38,1         45         21AMI00-57,15         31AMI00-45         41AMI00-57,2           38,1         57,15         21AMI00-57,15         31AMI00-57,15         41AMJ00-57,2 <tr< td=""><td></td><td>10000000</td><td>and the second second</td><td></td><td></td><td></td></tr<>		10000000	and the second			
35         52,5         21ALE00-52,5         31ALE00-52,5         41ALE00-52,5           35         55         21ALE00-55         31ALE00-55         41ALE00-55           35         70         21ALE00-70         31ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-52         41AMI00-52           38         56         21AMI00-57         31AMI00-55         41AMI00-56           38         56         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57           38         57,2         21AMI00-57,2         31AMI00-105         41AMI00-105           38,1         45         21AMI00-45         31AMI00-45         41AMI00-105           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2	35	50				
35         55         21ALE00-55         31ALE00-55         41ALE00-55           35         70         21ALE00-70         31ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-45         41AMI00-52           38         52         21AMI00-52         31AMI00-55         41AMI00-52           38         52         21AMI00-52         31AMI00-55         41AMI00-52           38         56         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-45         31AMI00-105         41AMI00-105           38,1         45         21AMI00-45         31AMI00-50         41AMI00-50           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2				and a second second second second		
35         70         21ALE00-70         31ALE00-70         41ALE00-70           38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-52         41AMI00-52           38         56         21AMI00-56         31AMI00-56         41AMI00-56           38         56         21AMI00-57         31AMI00-56         41AMI00-56           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-45         31AMI00-105         41AMI00-105           38,1         45         21AMI00-45         31AMI00-105         41AMI00-105           38,1         50         21AMI00-50         31AMI00-57,15         41AMJ00-45           38,1         57,2         21AMJ00-57,15         31AMJ00-57,2         41AMJ00-57,2           38,1         57,2         21AMJ00-57,2         31AMJ00-57,3         41AMJ00-57,3           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3<						
38         45         21AMI00-45         31AMI00-45         41AMI00-45           38         52         21AMI00-52         31AMI00-52         41AMI00-52           38         56         21AMI00-56         31AMI00-56         41AMI00-56           38         56         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-105         31AMI00-105         41AMI00-105           38,1         105         21AMI00-45         31AMI00-105         41AMI00-105           38,1         45         21AMI00-50         31AMI00-105         41AMI00-45           38,1         50         21AMI00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,2         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41A		100000				
38         52         21AMI00-52         31AMI00-52         41AMI00-52           38         56         21AMI00-56         31AMI00-56         41AMI00-56           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-105         31AMI00-105         41AMI00-105           38,1         105         21AMI00-45         31AMI00-105         41AMI00-45           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMI00-50           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMI00-57,15           38,1         57,2         21AMI00-57,2         31AMI00-57,15         41AMI00-57,15           38,1         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38,1         57,2         21AMI00-57,3         31AMI00-57,3         41AMI00-57,3           38,1         57,3         21AMI00-57,3         31AMI00-57,3         41AMI00-57,3						
38         56         21AMI00-56         31AMI00-56         41AMI00-56           38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-105         31AMI00-105         41AMI00-105           38,1         105         21AMI00-45         31AMI00-105         41AMI00-105           38,1         45         21AMI00-45         31AMI00-105         41AMI00-45           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMI00-50           38,1         50         21AMI00-57,15         31AMI00-57,15         41AMI00-57,15           38,1         57,2         21AMI00-57,2         31AMI00-57,15         41AMI00-57,15           38,1         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38,1         57,3         21AMI00-57,3         31AMI00-57,3         41AMI00-57,3		10000				
38         57         21AMI00-57         31AMI00-57         41AMI00-57           38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-105         31AMI00-105         41AMI00-105           38,1         45         21AMI00-45         31AMI00-45         41AMI00-45           38,1         50         21AMI00-57,15         31AMJ00-45         41AMJ00-45           38,1         50         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,15         41AMJ00-57,2           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3				2		
38         57,2         21AMI00-57,2         31AMI00-57,2         41AMI00-57,2           38         105         21AMI00-105         31AMI00-105         41AMI00-105           38,1         45         21AMI00-45         31AMI00-45         41AMI00-45           38,1         50         21AMI00-57,15         31AMJ00-45         41AMJ00-45           38,1         50         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3			A CONTRACTOR OF A CONTRACTOR O			
38         105         21AMI00-105         31AMI00-105         41AMI00-105           38,1         45         21AMJ00-45         31AMJ00-45         41AMJ00-45           38,1         50         21AMJ00-50         31AMJ00-50         41AMJ00-50           38,1         57         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3			1	2		
38,1         45         21AMJ00-45         31AMJ00-45         41AMJ00-45           38,1         50         21AMJ00-50         31AMJ00-50         41AMJ00-50           38,1         57,15         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3		1000000000				
38,1         50         21AMJ00-50         31AMJ00-50         41AMJ00-50           38,1         57,15         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3	2					
38,1         57,15         21AMJ00-57,15         31AMJ00-57,15         41AMJ00-57,15           38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3			a state of the sta	and a second	Name and American America	
38,1         57,2         21AMJ00-57,2         31AMJ00-57,2         41AMJ00-57,2           38,1         57,3         21AMJ00-57,3         31AMJ00-57,3         41AMJ00-57,3						
38,1 57,3 21AMJ00-57,3 31AMJ00-57,3 41AMJ00-57,3						
	-	1.000 0				
	38,1	74,6	21AMJ00-74,6	and a second		

PART OF







## Orbital welding (Closed heads) -Accessories (Elbow Flanges)

## AXXAIR

INNOVATIVE ORBITAL SOLUTIONS

	-				1
OD mm	R mm	SATFX-52	SATFX-76	SATFX-115	SSEDX
38,1	304,8	21AMJ00-304,8	31AMJ00-304,8	41AMJ00-304,8	
38,1	457,2	21AMJ00-457,2	31AMJ00-457,2	41AMJ00-457,2	
38,1	609,6	21AMJ00-609,6	31AMJ00-609,6	41AMJ00-609,6	
38,1	914,4	21AMJ00-914,4	31AMJ00-914,4	41AMJ00-914,4	
40	60	21ANC00-60	31ANC00-60	41ANC00-60	
41	60	21ANM00-60	31ANM00-60	41ANM00-60	
41	82	21ANM00-82	31ANM00-82	41ANM00-82	
42,1	31,8				
42,2	31,8				
42,2	47	21ANY00-47	31ANY00-47	41ANY00-47	
42,2	47,6	21ANY00-47,6	31ANY00-47,6	41ANY00-47,6	
42,4	47	21AOA00-47	31AOA00-47	41AOA00-47	
42,4	47,6	21AOA00-47,6	31AOA00-47,6	41AOA00-47,6	
42,4	48	21AOA00-48	31AOA00-48	41AOA00-48	
42,4	63,6	21AOA00-63,6	31AOA00-63,6	41AOA00-63,6	
42,4	93	21AOA00-93	31AOA00-93	41AOA00-93	
43	64,5	21AOG00-64,5	31AOG00-64,5	41AOG00-64,5	
43	70	21AOG00-70	31AOG00-70	41AOG00-70	
43	120	21AOG00-120	31AOG00-120	41AOG00-120	
44,5	51	21AOV00-51	31AOV00-51	41AOV00-51	
44,5	64,5	21AOV00-64,5	31AOV00-64,5	41AOV00-64,5	
44,5	66	21AOV00-66	31AOV00-66	41AOV00-66	
44,5	120	21AOV00-120	31AOV00-120	41AOV00-120	
48,1	38,1	21AQF00-38,1A	31AQF00-38,1A	41AQF00-38,1A	J
48,3	38,1	21AQH00-38,1A	31AQH00-38,1A	41AQH00-38,1A	1
48,3	57	21AQH00-57	31AQH00-57	41AQH00-57	
48,3	57,1	21AQH00-57,1	31AQH00-57,1	41AQH00-57,1	
48,3	57,2	21AQH00-57,2	31AQH00-57,2	41AQH00-57,2	
48,3	64,15	21AQH00-64,15	31AQH00-64,15	41AQH00-64,15	
48,3	72,45	21AQH00-72,45	31AQH00-72,45	41AQH00-72,45	
48,3	108	21AQH00-108	31AQH00-108	41AQH00-108	
48,6	57,2	21AQK00-57,2	31AQK00-57,2	41AQK00-57,2	
50	75	21AQY00-75	31AQY00-75	41AQY00-75	
50,8	60	21ARG00-60	31ARG00-60	41ARG00-60	
50,8	67,5	21ARG00-67,5	31ARG00-67,5	41ARG00-67,5	
50,8	76,2	21ARG00-07,3	31ARG00-76,2	41ARG00-07,5	
50,8	103,17	21ARG00-76,2 21ARG00-103,17	31ARG00-103,17	41ARG00-103,17	
	304,8	21ARG00-304,8		41ARG00-304,8	
50,8			31ARG00-304,8		
50,8	457,2	21ARG00-457,2	31ARG00-457,2	41ARG00-457,2 41ARG00-609,6	
50,8	609,6	21ARG00-609,6	31ARG00-609,6		
50,8	914,4	21ARG00-914,4	31ARG00-914,4	41ARG00-914,4	
50,8	1219,2	21ARG00-1219,2	31ARG00-1219,2	41ARG00-1219,2	
51	51	214 000 62	31ARI00-51	41ARI00-51	
51	63	21ARI00-63	31ARI00-63	41ARI00-63	
51	67,5	21ARI00-67,5	31ARI00-67,5	41ARI00-67,5	
51	75	21ARI00-75	31ARI00-75	41ARI00-75	
51	76	21ARI00-76	31ARI00-76	41ARI00-76	
51	76,2	21ARI00-76,2	31ARI00-76,2	41ARI00-76,2	
51	76,5	21ARI00-76,5	31ARI00-76,5	41ARI00-76,5	
52	69	21ARS00-69	31ARS00-69	41ARS00-69	
52	70	21ARS00-70	31ARS00-70	41ARS00-70	
52	75	21ARS00-75	31ARS00-75	41ARS00-75	



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## Orbital welding (Closed heads) -Accessories (Elbow Flanges)



INNOVATIVE ORBITAL SOLUTIONS

OD	R	SATFX-52	SATFX-76	SATFX-115	SSEDX
mm	mm	5A1FA-52	SAIFA-/0	SAIFA-IIS	SSEDA
52	78	21ARS00-78	31ARS00-78	41ARS00-778	
53	70		31ASC00-70	41ASC00-70	
53	75		31ASC00-75	41ASC00-75	
53	79,5		31ASC00-79,5	41ASC00-79,5	
53	106		31ASC00-106	41ASC00-106	
53	150		31ASC00-150	41ASC00-150	
54	54		31ASM00-54	41ASM00-54	
54	68,5		31ASM00-68,5	41ASM00-68,5	
54	70		31ASM00-70	41ASM00-70	
54	75		31ASM00-75	41ASM00-75	
54	150		31ASM00-150	41ASM00-150	
56	77		31ATG00-77	41ATG00-77	
57	72		31ATQ00-72	41ATQ00-72	
60,3	50,8		31AUX00-50,8A	41AUX00-50,8A	~
60,3	76		31AUX00-76	41AUX00-76	
60,3	76,1		31AUX00-76,1	41AUX00-76,1	
60,3	76,2		31AUX00-76,2	41AUX00-76,2	
60,3	80		31AUX00-80	41AUX00-80	
60,3	90,45		31AUX00-90,45	41AUX00-90,45	
60,3	135		31AUX00-135	41AUX00-135	
63	95		31AVY00-95	41AVY00-95	
63,5	79		31AWD00-79	41AWD00-79	
63,5	82,5		31AWD00-82,5	41AWD00-82,5	
63,5	90		31AWD00-90	41AWD00-90	
63,5	94,5		31AWD00-94,5	41AWD00-94,5	
63,5	95,25		31AWD00-95,25	41AWD00-95,25	
63,5	131,75		31AWD00-131,75	41AWD00-131,75	
63,5	304,8		31AWD00-304,8	41AWD00-304,8	
63,5	457,2		31AWD00-457,2	41AWD00-457,2	
63,5	609,6		31AWD00-609,6	41AWD00-609,6	
63,5	914,4		31AWD00-914,4	41AWD00-914,4	
64	180		31AWI00-180	41AWI00-180	
70	80		31AYQ00-80	41AYQ00-80	
70	92		31AYQ00-92	41AYQ00-92	
70	95		31AYQ00-95	41AYQ00-95	
70	97,5		31AYQ00-97,5	41AYQ00-97,5	
70	105		31AYQ00-105	41AYQ00-105	
70	130		31AYQ00-130	41AYQ00-130	
70	140		31AYQ00-140	41AYQ00-140	
70	97,5		31AZA00-97,5	41AZA00-97,5	
73	63,5		31AZU00-63,5	41AZU00-63,5	
73	95		31AZU00-95	41AZU00-95	
73	95,3		31AZU00-95,3	41AZU00-95,3	
73	109,5		31AZU00-109,5	41AZU00-109,5	
74	140		31BAE00-140	41BAE00-140	
74	140		31BAY00-114	41BA200-140	
76,1	95		31BAZ00-95	41BAZ00-95	
76,1	96		31BAZ00-95	41BAZ00-96	
76,1	114		31BAZ00-30	41BAZ00-114	
76,1	114,15		31BAZ00-114,15	41BAZ00-114,15	
76,1	114,15		31BAZ00-114,15	41BAZ00-114,15 41BAZ00-175	
76,1	114,3		31BBA00-114,3	41BBA00-114,3	
70,2	114,5		5100A00-114,5	4100400-114,5	



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## Orbital welding (Closed heads) -Accessories (Elbow Flanges)



INNOVATIVE ORBITAL SOLUTIONS

OD	R	SATFX-52	SATFX-76	SATFX-115	SSEDX
mm	mm	UNIT A UL	OATTATO		
76,2	160,32		31BBA00-160,32	41BBA00-160,32	
76,2	304,8		31BBA00-304,8	41BBA00-304,8	
76,2	457,2		31BBA00-457,2	41BBA00-457,2	
76,2	609,6		31BBA00-609,6	41BBA00-609,6	
76,2	914,4		31BBA00-914,4	41BBA00-914,4	
76,2	1219,2		31BBA00-1219,2	41BBA00-1219,2	
76,3	82		31BBB00-82	41BBB00-82	
84	120			41BEA00-120	
84	126			41BEA00-126	
84	160			41BEA00-160	
85	90			41BEK00-90	
86	126			41BEU00-126	
88,9	76,2			41BFX00-76,2	
88,9	114			41BFX00-114	
88,9	114,3			41BFX00-114,3	
88,9	114,5			41BFX00-114,5	
88,9	205			41BFX00-205	
101,6	88,9			41BKU00-88,9	
101,6	110			41BKU00-110	
101,6	114,3			41BKU00-114,3	
101,6	133			41BKU00-133	
101,6	133,4			41BKU00-133,4	
101,6	133,5			41BKU00-133,5	
101,6	134,5			41BKU00-134,5	
101,6	150			41BKU00-150	
101,6	152			41BKU00-152	
101,6	152,4			41BKU00-152,4	
101,6	211,12			41BKU00-211,12	
101,6	304,8			41BKU00-304,8	
101,6	457,2			41BKU00-457,2	
101,6	609,6			41BKU00-609,6	
101,6	914,4			41BKU00-914,4	
101,6	1219,2			41BKU00-1219,2	
104	100			41BLS00-100	
104	110			41BLS00-110	
104	140			41BLS00-140	
104	150			41BLS00-150	
104	152			41BLS00-152	
104	200			41BLS00-200	
106	150			41BMM00-150	
108	142,5			41BNG00-142,5	
114,3	101,6			41BPR00-101,6	
114,3	152			41BPR00-152	
114,3	152,4			41BPR00-152,4	
114,3	152,5			41BPR00-152,5	
114,3	270			41BPR00-270	
114,5	270			1201100 270	

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## **Orbital welding** (Closed heads) - Accessories



INNOVATIVE ORBITAL SOLUTIONS



Product Code	Description	Net weight	Dimensions	
SSEDX	Offset electrode support	0.008 kg	150 x 210 mm	
<b>Remote</b> electrode holder for ø1.6 mm and ø2.4mm electrodes:				

The SSEDX accessory allows a lateral displacement of 2 to 6.5mm from the original position which allows for the welding of short elbows for example.

If you use this system, the usable diameter range of the tube is reduced:

✓ SATFX-52

Machine	ø min	ø max
SATFX-52	6 mm	43 mm
SATFX-76	6 mm	67 mm
SATFX-115	12 mm	107 mm

See cosumables to find the electrodes required for its use.





Product Code	Description	Net weight	Dimensions	
SSEIX	Inclined electrode holder	0.015 kg	150 x 210 mm	
Inclined electrode holder for ø1.6 mm and ø2.4mm electrodes:				

The SSEIX accessory allows the electrode to be tilted from 0 ° to 45°, which makes it possible to produce angle welds (flange welds or other accessories).

If you use this system, the usable diameter range of the tube is reduced:

Machine	ø min	ø max
SATFX-52	6 mm	28 mm
SATFX-76	6 mm	52 mm
SATFX-115	12 mm	92 mm

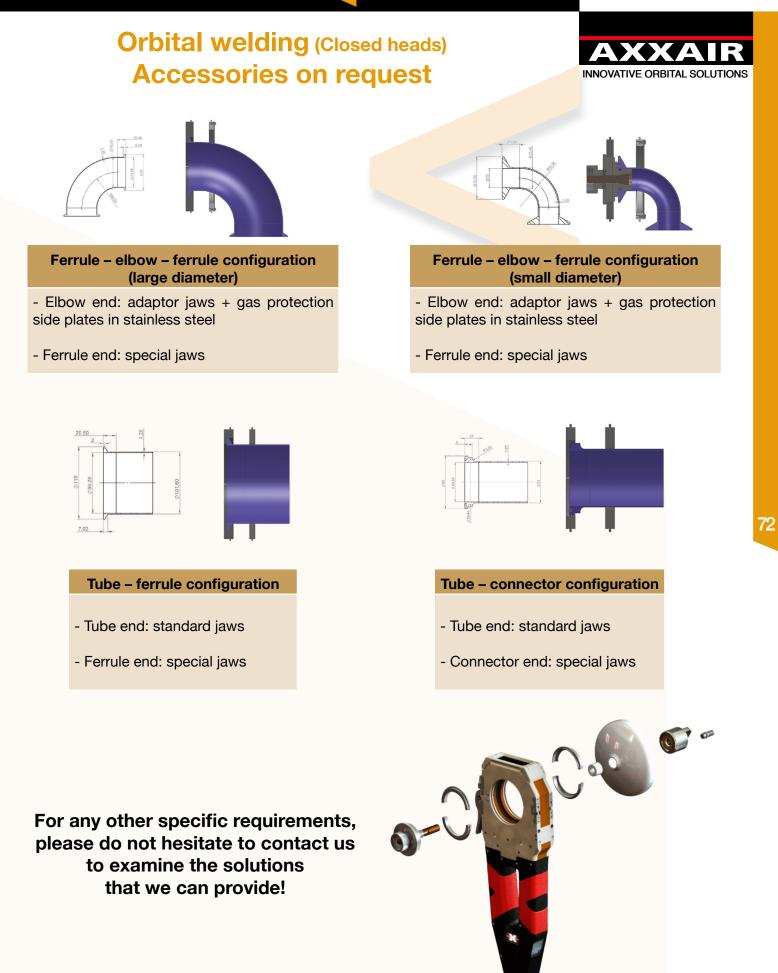
See cosumables to find the electrodes required for its use.

✓ SATFX-52	✓ SATFX-76	✓ SATFX-115





Join experience





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**▶**Х♠Х∢∆ INNOVATIVE ORBITAL SOLUTIONS

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## **Orbital welding** (Closed heads) - **Consumables**

Our electrodes are specifically sharpened to 20° with a flat. This increases the service life of the electrodes.

We offer pre-cut electrodes to cover the entire clamping range of the head without damaging the rotary system. The electrode must be selected according to the outer diameter of the tube to be welded.

Electrodes for SATFX-52						
Tube OD / ø of the Tube	Electrode Pr ø1		Electrode Product C ø2.4	ode	Electrode length in mm	1
06 – 11,5 mm	SCE1	6-48	SCE24-48		48.0	
11,5 – 18,5 mm	SCE16	6-44.5	SCE24-44.5		44.5	
18,5 – 25,5 mm	SCE1	6-41	SCE24-41		41.0	
25,5 – 32,5 mm	SCE16-37.5		SCE24-37.5		37.5	
32,5 – 39,5 mm	SCE16-34		SCE24-34		34.0	
39,5 – 46,5 mm	SCE16	6-30.5	SCE24-30.5		30.5	
46,5 – 52 mm	SCE1	16-27 SCE24-27		27.0		
✓ SATFX-52 SATFX-76 SATFX-115						

Electrodes for SATFX-76				
Tube OD / ø of the Tube	Electrode Product Code ø1.6	Electrode Product Co ø2.4	de Electrode length in mm	
06 – 7,5 mm	SCE16-62	SCE24-62	62.0	
7,5 – 14,5 mm	SCE16-58.5	SCE24-58.5	58.5	
14,5 – 21,5 mm	SCE16-55	SCE24-55	55.0	
21,5 – 28,5 mm	SCE16-51.5	SCE24-51.5	51.5	
28,5 – 35,5 mm	SCE16-48	SCE24-48	48.0	
35,5 – 42,5 mm	- 42,5 mm SCE16-44.5 SCE24-44.5		44.5	
42,5 – 49,5 mm	SCE16-41	SCE24-41	41.0	
49,5 – 56,5 mm	SCE16-37.5	SCE24-37.5	37.5	
56,5 – 63,5 mm	SCE16-34	SCE24-34	34.0	
63,5 – 70,5 mm	SCE16-30.5	SCE24-30.5	30.5	
70,5 – 77 mm	SCE16-27	SCE24-27	27.0	
SATFX-52 <b>√SATFX-76</b> SATFX-115		SATFX-115		





Join experience

## **Orbital welding** (Closed heads) - **Consumables**

INNOVATIVE ORBITAL SOLUTIONS

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Electrodes for SATFX-115				
Tube OD / ø of the Tube	Electrode Product Code ø1.6	Electrode Product C ø2.4	Code Electrode length in mm	
12 – 19,5 mm	SCE16-76	SCE24-76	76.0	
19,5 – 26,5 mm	SCE16-72.5	SCE24-72.5	72.5	
26,5 – 33,5 mm	SCE16-69	SCE24-69	69.0	
33,5 – 40,5 mm	SCE16-65.5	SCE24-65.5	65.5	
40,5 – 47,5 mm	SCE16-62	SCE24-62	62.0	
47,5 –54,5 mm	SCE16-58.5	SCE24-58.5	58.5	
54,5 – 61,5 mm	SCE16-55	SCE24-55	55.0	
61,5 – 68,5 mm	SCE16-51.5	SCE24-51.5	51.5	
68,5 – 75,5 mm	SCE16-48	SCE24-48	48.0	
75,5 – 82,5 mm	SCE16-44.5	SCE24-44.5	44.5	
82,5 – 89,5 mm	SCE16-41	SCE24-41	41.0	
89,5 – 96,5 mm	SCE16-37.5	SCE24-37.5	37.5	
96,5 – 103,5 mm	SCE16-34	SCE24-34	34.0	
103,5 – 110,5 mm	SCE16-30.5	SCE24-30.5	30.5	
110,5 – 115 mm	SCE16-27	SCE24-27	27.0	
SATFX-52 SATFX-76 <b>√SATFX-115</b>				





## Join experience

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INNOVATIVE ORBITAL SOLUTIONS

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## Orbital welding (Closed head) - Consumables

Electrodes when using the accessory SSEDX

**SSEDX :** <u>**Remote**</u> electrode holder for ø1.6 mm and ø2.4mm electrodes.

If you use this system, the usable diameter range of the tube is reduced.

Electrodes for SATFX-52 when using the accessory SSEDX

Tube OD / ø of the Tube	Electrode Product Code ø1.6	Electrode Product Code ø2.4	Electrode length
06 – 13 mm	SCE16-27	SCE24-27	27.0 mm
09 - 16 mm	SCE16-25.5	SCE24-25.5	25.5 mm
11 - 18 mm	SCE16-24.5	SCE24-24.5	24.5 mm
16 - 23 mm	SCE16-22	SCE24-22	22.0 mm
18 - 25 mm	SCE16-21	SCE24-21	21.0 mm
20 - 27 mm	SCE16-20	SCE24-20	20.0 mm
22 - 29 mm	SCE16-19	SCE24-19	19.0 mm
23 - 30 mm	SCE16-18.5	SCE24-18.5	18.5 mm
24 - 31 mm	SCE16-18	SCE24-18	18.0 mm
25 - 32 mm	SCE16-17.5	SCE24-17.5	17.5 mm
30 - 37 mm	SCE16-15	SCE24-15	15.0 mm
36 - 43 mm	SCE16-12	SCE24-12	12.0 mm

Electrodes for SATFX-76 when using the accessory SSEDX						
Tube OD / ø of the Tube	Tube OD / ø of the Tube Electrode Product Code ø1.6 Electrode Product Code ø2.4 Electrod					
06 – 09 mm	SCE16-41	SCE24-41	41.0 mm			
09 - 16 mm	SCE16-37.5	SCE24-37.5	37.5 mm			
16 - 23 mm	SCE16-34	SCE24-34	34.0 mm			
23 - 30 mm	SCE16-30.5	SCE24-30.5	30.5 mm			
30 - 37 mm	SCE16-27	SCE24-27	27.0 mm			
33 - 40 mm	SCE16-25.5	SCE24-25.5	25.5 mm			
35 - 42 mm	SCE16-24.5	SCE24-24.5	24.5 mm			
40 - 47 mm	SCE16-22	SCE24-22	22.0 mm			
42 - 49 mm	SCE16-21	SCE24-21	21.0 mm			
44- 51 mm	SCE16-20	SCE24-20	20.0 mm			



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## Orbital welding (Closed head) - Consumables

Electrodes when using the accessory SSEDX

INNOVATIVE ORBITAL SOLUTIONS

Electrodes for SATFX-76 when using the accessory SSEDX							
Tube OD / ø of the Tube	Electrode Product Code ø1.6		Electrode Product Code ø2.4		Electrode length		
46 - 53 mm	SCE16-19		SCE24-19		19.0 mm		
47 - 54 mm		SCE16-18.5	SCE24-18.5		18.5 mm		
48 - 55 mm	SCE16-18		SCE24-18		18.0 mm		
49 - 56 mm	SCE16-17.5		SCE24-17.5		17.5 mm		
54 - 61 mm	SCE16-15		SCE24-15		15.0 mm		
60 - 67 mm		SCE16-12	SCE24-12		12.0 mm		
SATFX-52		✓ SATFX-76		SATFX-115			

St Electrodes for SATFX-115 when using the accessory SSEDX							
Tube OD / ø of the Tube	Electrode Product Code ø1.6	Electrode Product Code ø2.4	Electrode length				
12 – 14 mm	SCE16-58.5	SCE24-58.5	58.5 mm				
14 - 21 mm	SCE16-55	SCE24-55	55.0 mm				
21 - 28 mm	SCE16-51.5	SCE24-51.5	51.5 mm				
28 - 35 mm	SCE16-48	SCE24-48	48.0 mm				
35 - 42 mm	SCE16-44.5	SCE24-44.5	44.5 mm				
42 - 49 mm	SCE16-41	SCE24-41	41.0 mm				
49 - 56 mm	SCE16-37.5	SCE24-37.5	37.5 mm				
56 - 63 mm	SCE16-34	SCE24-34	34.0 mm				
63 - 70 mm	SCE16-30.5	SCE24-30.5	30.5 mm				
70 - 77 mm	SCE16-27	SCE24-27	27.0 mm				
73 - 80 mm	SCE16-25.5	SCE24-25.5	25.5 mm				
75 - 82 mm	SCE16-24.5	SCE24-24.5	24.5 mm				
80 - 87 mm	SCE16-22	SCE24-22	22.0 mm				
82 - 89 mm	SCE16-21	SCE24-21	21.0 mm				
84 - 91 mm	SCE16-20	SCE24-20	20.0 mm				
86 - 93 mm	SCE16-19	SCE24-19	19.0 mm				
87- 94 mm	SCE16-18.5	SCE24-18.5	18.5 mm				
88 - 95 mm	SCE16-18	SCE24-18	18.0 mm				
89 - 96 mm	SCE16-17.5	SCE24-17.5	17.5 mm				
94 - 101 mm	SCE16-15	SCE24-15	15.0 mm				
100 - 107 mm	SCE16-12	SCE24-12	12.0 mm				
SATEX-52 SATEX-76 SATEX-115							

SATFX-52

SATFX-76

SATFX-115





## Join experience

INNOVATIVE ORBITAL SOLUTIONS

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## Orbital welding (Closed head) - Consumables

Electrodes when using the accessory SSEIX



**SSEIX :** <u>Inclined</u> electrode holder for ø1.6 mm and ø2.4mm electrodes.

If you use this system, the usable diameter range of the tube is reduced.

**Electrodes for SATFX-52 when using the accessory SSEIX** 

Tube OD / ø of the Tube 0° inclined	Tube OD / ø of the Tube 15° inclined	Tube OD / ø of the Tube 30° inclined	Tube OD / ø of the Tube 45° inclined	Electrode Product Code ø1.6	Electrode Product Code ø2.4	Electrode length	
-	-	-	6,00 - 12,61 mm	SCE16-27	SCE24-27	27 mm	
-	-	-	7,73 - 14,73 mm	SCE16-25.5	SCE24-25.5	25,5 mm	
-	-	-	9,14 - 16,14 mm	SCE16-24.5	SCE24-24.5	24,5 mm	
-	-	-	12,68 - 19,68 mm	SCE16-22	SCE24-22	22 mm	
-	-	6,00 - 12,38 mm	14,09 - 21,09 mm	SCE16-21	SCE24-21	21 mm	
-	-	7,11- 14,11 mm	15,50 - 22,50 mm	SCE16-20	SCE24-20	20 mm	
-	-	8,85 - 15,85 mm	16,92 - 23,92 mm	SCE16-19	SCE24-19	19 mm	
-	-	9,71 - 16,71 mm	17,63 - 24,63 mm			18,5 mm	
-	6,00 - 12,70 mm	10,58 - 17,58 mm	18,33 - 25,33 mm	SCE16-18	SCE24-18	18 mm	
6,00 - 12,50 mm	6,67 - 13,67 mm	11,44 - 18,44 mm	19,04 - 26,04 mm	SCE16-17.5	SCE24-17.5	17,5 mm	
10,50 - 17,50 mm	11,50 - 18,50 mm	15,77 - 22,77 mm	22,58 - 29,58 mm	SCE16-15	SCE24-15	15 mm	
16,5 - 23,5 mm	17,29 - 24,29 mm	20,97 - 27,97 mm	26,82 - 33,82 mm	SCE16-12	SCE24-12	12 mm	
√ s	SATFX-52		SATFX-76		SATFX-115		

For special application only - Outside standard machine template

For application with jaws for flanges only





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Join experience

## Orbital welding (Closed head) - Consumables

Electrodes when using the accessory SSEIX

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INNOVATIVE ORBITAL SOLUTIONS

Electrodes for SATFX-76 when using the accessory SSEIX								
Tube OD / ø of the Tube 0° inclined	Tube OD / ø of the Tube 15° inclined	Tube OD / ø of the Tube 30° inclined	Tube OD / ø of the Tube 45° inclined	Electrode Product Code ø1.6	Electrode Product Code ø2.4	Electrode length		
-	-	-	9,83 - 16,83 mm	SCE16-41	SCE24-41	41 mm		
-	-	-	14,78 - 21,78 mm	SCE16-37.5	SCE24-37.5	37,5 mm		
-	-	6,89 - 13,89 mm	19,73 - 26,73 mm	SCE16-34	SCE24-34	34 mm		
6 - 10,5 mm	6,00 - 12,57 mm	12,95 - 19,95 mm	24,68 - 31,68 mm	SCE16-30.5	SCE24-30.5	30,5 mm		
10,5 - 17,5 mm	12,34 - 19,34 mm	19,01 - 26,01 mm	29,63 - 36,63 mm	SCE16-27	SCE24-27	27 mm		
13,5 - 20,5 mm	15,23 - 22,23 mm	21,61 - 28,61 mm	31,75 - 38,75 mm	SCE16-25.5	SCE24-25.5	25,5 mm		
15,5 - 22,5 mm	17,17 - 24,17 mm	23,34 - 30,34 mm	33,16 - 40,16 mm	SCE16-24.5	SCE24-24.5	24,5 mm		
20,5 - 27,5 mm	22,00 - 29,00 mm	27,67 - 34,67 mm	36,70 - 43,70 mm	SCE16-22	SCE24-22	22 mm		
22,5 - 29,5 mm	23,93 - 30,93 mm	29,40 - 36,40 mm	SCE16-21		SCE24-21	21 mm		
24,5 - 31,5 mm	25,86 - 32,86 mm	31,13 - 38,13 mm	39,52 - 46,52 mm	SCE16-20	SCE24-20	20 mm		
26,5 - 33,5 mm	27,79 - 34,79 mm	32,87 - 39,87 mm	40,94 - 47,94 mm	SCE16-19	SCE24-19	19 mm		
27,5 - 34,5 mm	28,76 - 35,76 mm	33,73 - 40,73 mm	41,65 - 48,65 mm			18,5 mm		
28,5 - 35,5 mm	29,72 - 36,72 mm	34,60 - 41,60 mm	42,35 - 49,35 mm	SCE16-18	SCE24-18	18 mm		
29,5 - 36,5 mm	30,69 - 37,69 mm	35,46 - 42,46 mm	43,06 - 50,06 mm	SCE16-17.5	SCE24-17.5	17,5 mm		
34,5 - 41,5	35,52 - 42,52 mm	39,79 - 46,79 mm	46,60 - 53,60 mm	SCE16-15	SCE24-15	15 mm		
40,5 - 47,5 mm	41,31 - 48,31 mm	44,99 - 51,99 mm	50,84 - 57,84 mm	SCE16-12	SCE24-12	12 mm		
S	ATFX-52		✓ SATFX-76			SATFX-115		

For special application only - Outside standard machine template

For application with jaws for flanges only

## Join experience



## Orbital welding (Closed head) - Consumables

Electrodes when using the accessory SSEIX

INNOVATIVE ORBITAL SOLUTIONS

Solution Electrodes for SATFX-115 when using the accessory SSEIX							
Tube OD / ø of the Tube 0° inclined	Tube OD / ø of the Tube 15° inclined	Tube OD / ø of the Tube 30° inclined	Tube OD / ø of the Tube 45° inclined	Electrode Product Code ø1.6	Electrode Product Code ø2.4	Electrode length	
-	-	-	20,13 - 27,13 mm	SCE16-62	SCE24-62	62 mm	
-	-	-	25,08 - 32,08 mm	SCE16-58.5	SCE24-58.5	58,5 mm	
-	-	10,51 - 17,51 mm	30,03 - 37,03 mm	SCE16-55	SCE24-55	55 mm	
-	-	16,57 - 23,57 mm	34,98 - 41,98 mm	SCE16-51.5	SCE24-51.5	51,5 mm	
12 - 15,5 mm	12,00 - 18,77 mm	22,64 - 29,64 mm	39,93 - 46,93 mm	SCE16-48	SCE24-48	48 mm	
15,5 - 22,5 mm	18,53 - 25,53 mm	28,70 - 35,70 mm	44,88 - 51,88 mm	SCE16-44.5	SCE24-44.5	44,5 mm	
22,5 - 29,5 mm	25,29 - 32,29 mm	34,76 - 41,76 mm	49,83 - 56,83 mm	SCE16-41	SCE24-41	41 mm	
29,5 - 36,5 mm	32,05 - 39,05 mm	40,82 - 47,82 mm	54,78 - 61,78 mm	SCE16-37.5	SCE24-37.5	37,5 mm	
36,5 - 43,5 mm	38,81 - 45,81 mm	46,89 - 53,89 mm	59,73 - 66,73 mm	SCE16-34	SCE24-34	34 mm	
43,5 - 50,5 mm	45,57 - 52,57 mm	52,95 - 59,95 mm	64,68 - 71,68 mm	SCE16-30.5	SCE24-30.5	30,5 mm	
50,5 - 57,5 mm	52,34 - 59,34 mm	59,01 - 66,01 mm	69,63 - 76,63 mm	SCE16-27	SCE24-27	27 mm	
53,5 - 60,5 mm	55,23 - 62,23 mm	61,61 - 68,61 mm	71,75 - 78,75 mm	SCE16-25.5	SCE24-25.5	25,5 mm	
55,5 - 62,5 mm	57,17 - 64,17 mm	63,34 - 70,34 mm	73,16 - 80,16 mm	SCE16-24.5	SCE24-24.5	24,5 mm	
60,5 - 67,5 mm	62,00 - 69,00 mm	67,67 - 74,67 mm	76,70 - 83,70 mm	SCE16-22	SCE24-22	22 mm	
62,5 - 69,5 mm	63,93 - 70,93 mm	69,40 - 76,40 mm	78,11 - 85,11 mm	SCE16-21	SCE24-21	21 mm	
S	ATFX-52		SATFX-76		✓ SATFX-11	5	

For special application only - Outside standard machine template

For application with jaws for flanges only





## Orbital welding (Closed head) - Consumables

Electrodes when using the accessory SSEIX

<u>`</u> INNOVATIVE ORBITAL SOLUTIONS

Electrodes for SATFX-115 when using the accessory SSEIX								
Tube OD / ø of the Tube 0° inclined	ø of the Tube ø of		e OD / ne Tube nclined	Tube OD / ø of the Tube 45° inclined	Electrode Product Code ø1.6		Electrode Product Code ø2.4	Electrode length
64,5 - 71,5 mm	65,86 - 72,86 mm	71,13 - 79,52 - 78,13 mm 86,52 mm		SCE16-20		SCE24-20	20 mm	
66,5 - 73,5 mm	67,79 - 74,79 mm	72,87 - 79,87 mm		80,94 - 87,94 mm	SCE16-19		SCE24-19	19 mm
67,5 - 74,5 mm	68,76 - 75,76 mm		6,73 - 80,73 81,65 - mm 88,65 mm SCE16		SCE16-1	8.5	SCE24-18.5	18,5 mm
68,5 - 75,5 mm	69,72 - 76,72 mm	74,60 - 81,60 mm		82,35 - 89,35 mm	SCE16-18		SCE24-18	18 mm
69,5 - 76,5 mm	70,69 - 77,69 mm	75,46 - 82,46 mm		83,06 - 90,06 mm	SCE16-17.5		SCE24-17.5	17,5 mm
74,5 - 81,5 mm	75,52 - 82,52 mm	79,79 - 86,79 mm		86,60 - 93,60 mm	SCE16-15		SCE24-15	15 mm
80,5 - 87,5 mm	81,31 - 88,31 mm		- 91,99 าm	90,84 - 97,84 mm	SCE16-	12	SCE24-12	12 mm
SATFX-52						✓ SATFX-11	5	

For special application only - Outside standard machine template

For application with jaws for flanges only





Join experience



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