EDGE TECHNOLOGIES

Ranger 112

Version 3

Ranger 112

OPERATIONS MANUAL

RANGER 112
HYDRODYNAMIC AUTOMATIC BAR FEEDER
RANGER 112/25.25R EXT／RANGER 112/37.37R EXT

MANUAL FOR USE AND MAINTENANCE

VER：03 DATA：2018/07/17 COD：BRG102032

S/H

CONTENT (INDEX)

CONTENT (INDEX)

1. GENERAL INFORMATION

 **Please read the Manual carefully before operating bar feeder.**

1.1 Contents of the manual

The feeder manufacturer provides this manual, which is an essential part of the integrated products. Please act according to the indication of the manual in order to assure operators' safety as well as the machines', and greatly achieve economic efficiency and to get the best output of the machine's capability. The important part is printed in boldface, and included the following marks:

HAZARD-WARNING:

Hazard! It is possible to hurt you seriously, please be careful.

CAUTION:

For preventing the accident or the loss of property, you should take precautions.

INFORMATION:

Special important know-how information

Please take use of the table of contents, you will quickly find the information you need.

SKILLED:

The mark shown in the manual means that the machine should be operated by a qualified and expert operator. As to the other operation shall be handled by a qualified personnel or professional operator of bar feeder.

1.2 Machine data plate

A. Name of manufacturer

B. Model(Type)

C. Serial Number

D. Manufacture Date

E. Weight of Machine

F. Pneumatic Pressure

G. Rated Voltage

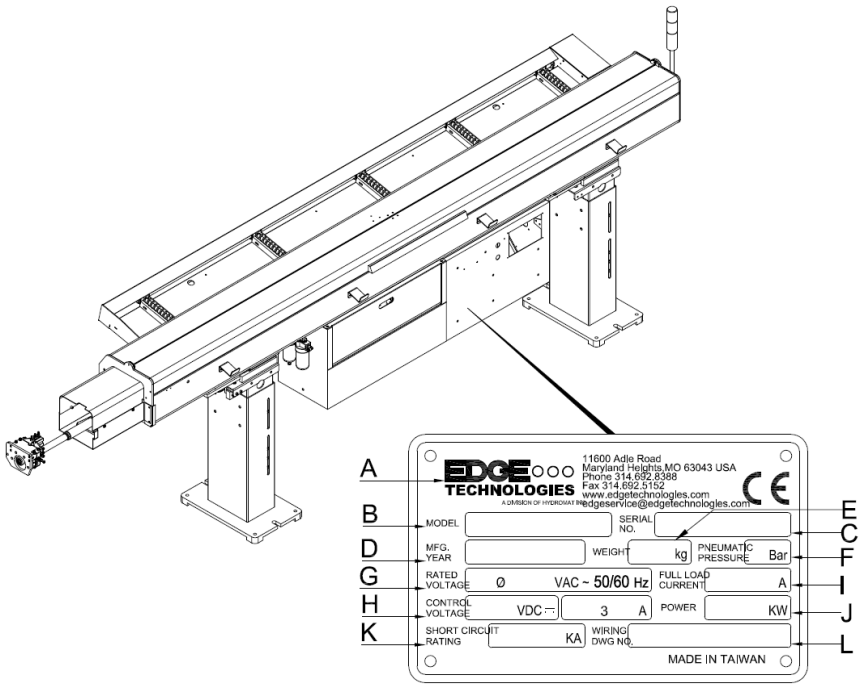
H. Control Voltage

I. Full Load Current

J. Power

K. Short Circuit Rating

L. Wiring Drawing Number



INFORMATION:

When inquiring or ordering the parts, please notify the manufacturer the above–mentioned in each standards.

1.3 Technical support

If you need any technical support , you can inquire the service center in the appendix at anytime.

INFORMATION:

When you need the support of technique, please refer to the label on the bar feeder. Tell us the data of the bar feeder.

2. TECHNICAL DATA

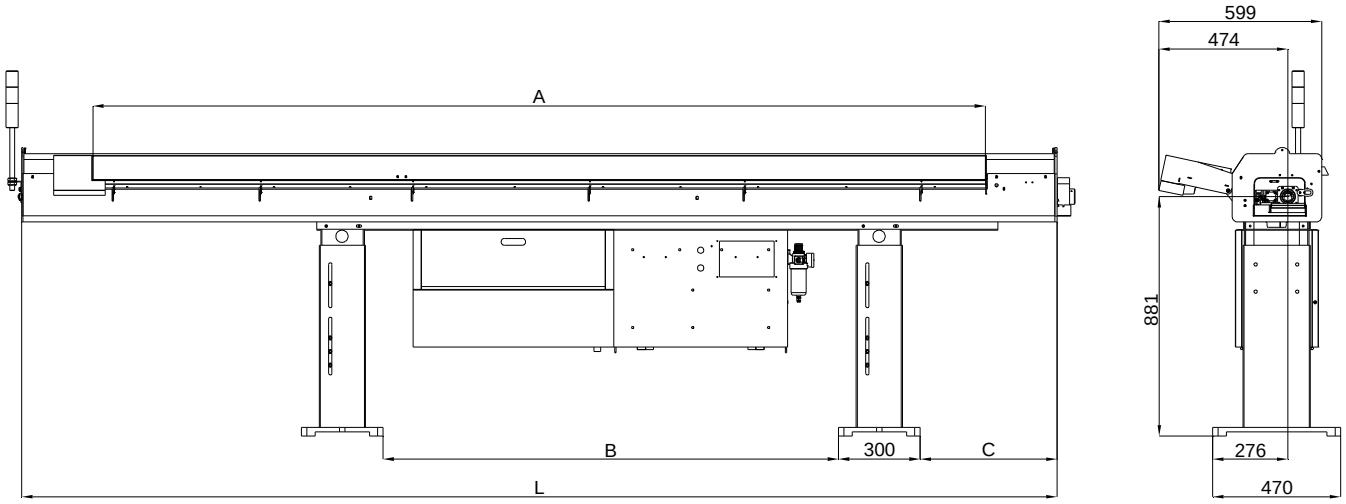
2.1 Instruction

The hydrodynamic automatic bar feeder is designed for full automatic lathe to auto feed material, the bar feeder is suitable for digital control sliding headstock lathe and fixed headstock lathe.
The program of the PLC system can control the bar feeder running with the lathe. The remote control box is easy to be operated.

The bar feeder can feed round bar, tubes and any other section of material. While the lathe is running, the guide channel is closed completely, at the same time; lubricating oil into the guide channel so that the noise and vibration can be reduced while the material is rotating in high speed. Furthermore, lubricating oil also can reduce the temperature resulted from friction so that the surface of the material can't be damaged.
The remnant material will be pushed out of the guide channel by the push bar or the next material.

The descriptions and legends of the manual are according to the operator stands at the left side of the lathe to be edited.

2.2 Machine footprint



MOD	*27*	*37*
L	3278 mm	4600 mm
A *(Max. Bar Length)*	2700 mm	3785 mm
B	1595 mm	2150 mm
C	584 mm	585 mm
Weight	385 kg	415 kg

2.3 Machine specifications

Bar Diameter	○ 1.5 mm (1/16") ～ 12 mm (1/2")
	⬡ 2 mm (5/64") ～ 11 mm (7/16")
Channel Size	08 / 11 / 14
Bar Loading Capacity	220mm ~22 bar Ø10
Lubricant Specification	40 (L) ISO CKB 100
Power Supply	220 / 380V 0.4A 50 / 60Hz
Pneumatic Supply	5 - 7 kg/cm²

2.4 Compressed air supply

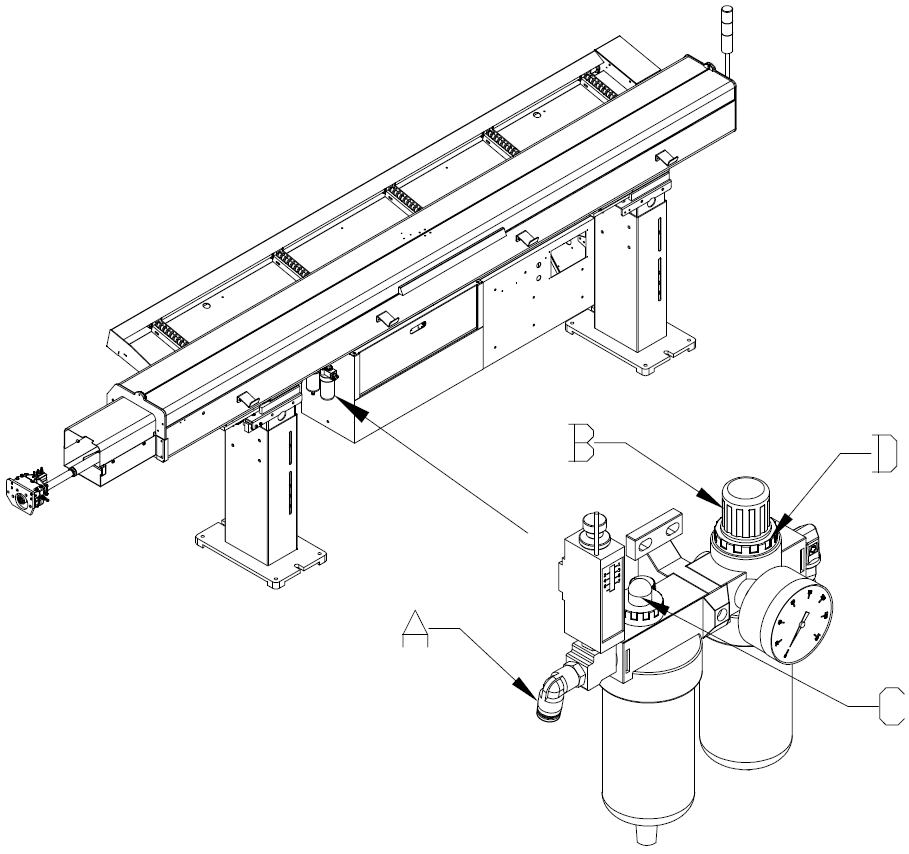
2.4.1 Tube size for compressed air supply unit must be not less than 8 mm. The pressure should be within 7 kg / cm^2 and the consumption near 50L/H.

2.4.2 Put the air supply tube into (A). Then pull and turn around the knob (B) to set the pressure at 6 kg / cm^2.

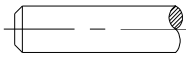
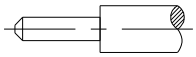
2.4.3 Control air lubrication from cylinder , adjust (C) , 1-2 drops／1000 L air if necessary.

2.4.4 Lubricating (D) , viscosity 32 Cat , temperature 40℃ , ISO VG type.

Adaptive lubricant			
BP ENERGOL HLP32	AGIP OSO 32	MOBIL DTE 24	ESSO NUTO H32



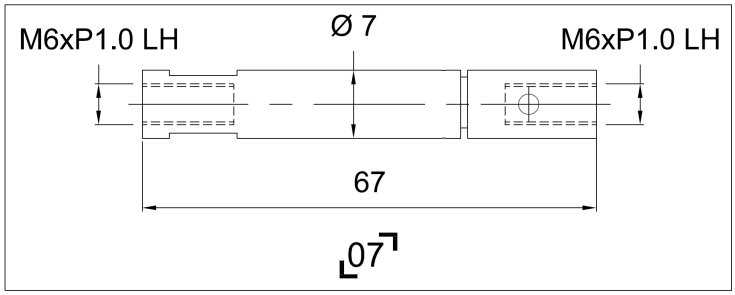
2.5 Guide channel - Selection

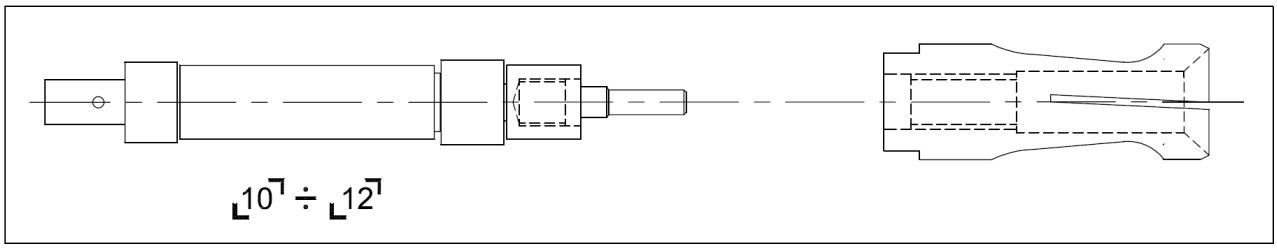
Diameter of guide channel (mm)	Diameter of bar pusher (mm)	Diameter of bar (mm)		
		Min.	Max.	
				
8	7	1.5	5.5	7
11	10	2	8	10
14	12	3	10	12

CAUTION

Note!! Outer diameter of the collet must be smaller 0.5 mm than diameter of bar pusher at least.

2.6 Revolving tip - Selection

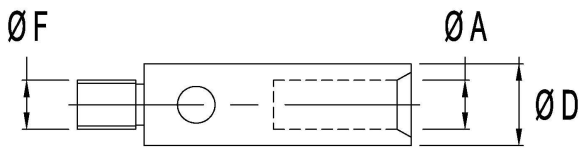


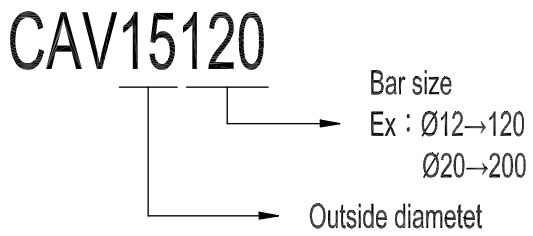


MOD.	Ø A	Part No. of revolving tip	
		Left thread	Right thread
7	Ø 7	CAV07000	
10	Ø 10		IER0610001
12	Ø 12.5		IER0712000

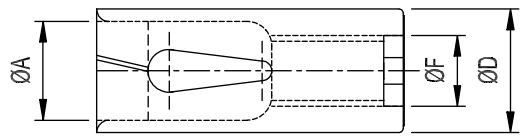
2.7 Collet - Selection

2.7.1 Specification of the collet for round bar





ØA \ ØF		M10 xP1.0 LH
mm	*in*	**Ø7 Ø D**
2		CAV07020
2.4	3/32"	CAV07024
2.5		CAV07025
3		CAV07030
3.5		CAV07035
4	5/32"	CAV07040
4.4	11/64"	CAV07044
4.5		CAV07045
4.6		CAV07046
4.8	3/16"	CAV07048
5		CAV07050
5.2	13/64"	CAV07052
5.5		CAV07055

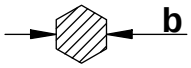
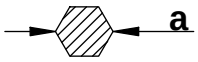
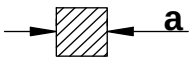
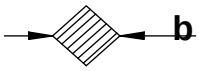


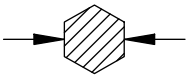
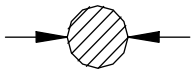
$IE^{R}_{L}1020XXX$

- ØA Bar size：Ex：Ø12→120, Ø22.5→225
- ØD Out
- ØF The metric thread：
- R：Right thread
- L：Left thread

ØA / ØF		M6 x0.75	M7 x0.75
mm	*in*	**Ø10**	**Ø12**
2	5/64”	0610020	0712020
2.5		0610025	0712025
2.8	7/64”	0610028	0712028
3		0610030	0712030
3.2	1/8”	0610032	0712032
3.5		0610035	0712035
3.6	9/64”	0610036	0712036
4	5/32”	0610040	0712040
4.4	11/64”	0610044	0712044
4.5		0610045	0712045
4.8	3/16”	0610048	0712048
5		0610050	0712050
5.2	13/64”	0610052	0712052
5.5	7/32”	0610055	0712055
6	15/64”	0610060	0712060
6.3	1/4”	0610063	0712063
6.5		0610065	0712065
7		0610070	0712070
7.2	9/32”	0310072	0712072
7.5	19/64”	0610075	0712075
8	5/16”	0610080	0712080
8.4	21/64”		0712084
8.5	11/32”		0712085
9	23/64”		0712090
9.5	3/8”		0712095
10	25/64”		0712100

2.7.2 Specification of the collet for polygonal material

 b	 a	Ø PINZA COLLET ZANCE PINCE	 a	 b	Ø PINZA COLLET ZANCE PINCE
3	3.48	3.25	1	1.41	1.3
3.5	4.04	3.8	1.5	2.12	2
4	4.61	4.5	2	2.82	2.7
4.5	5.19	5	2.5	3.53	3.4
5	5.77	5.5	3	4.24	4
5.5	6.35	6.2	4	5.65	5.5
6	6.92	6.8	4.5	6.36	6.2
6.5	7.50	7.3	5	7.07	6.8
7	8.08	7.8	5.5	7.77	7.5
7.5	8.66	8.5	6	8.48	8.3
8	9.23	9	6.5	9.19	9
9	10.39	10.2	7	9.89	9.7
10	11.54	11.3	8	11.31	11
11	12.70	12.5	8.5	12.01	11.8

	Ø PINZA COLLET ZANCE PINCE			Ø PINZA COLLET ZANCE PINCE
INCH	mm	inch	INCH	
1/8	3.5	9/64	1/8	3.25
3/16	5.25	13/64	3/16	4.75
1/4	7	9/32	1/4	6.5
5/16	8.75	11/32	5/16	8
3/8	10/75	27/64	3/8	9.5
7/16	12.5	31/64	7/16	11

3. TRANSPORTATION

HAZARD-WARNING

The lifting and handling are to be operate with proper equipment (Refer to the weight of chapter 3.2) and by skilled staff, trained for the kind of transportation.

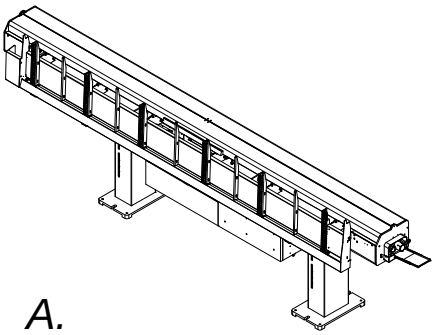
3.1 Packaging

The bar feeder will be arrived in one of three ways:

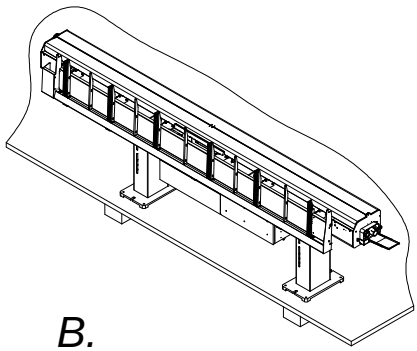
A. Without packaging.

B. On the pallet, Put the feeder on the pallet and package the feeder with plastic film.

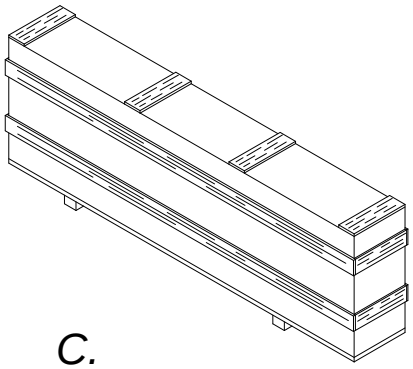
C. Created in a wooden box**,** and package the feeder with plastic film.



A.



B.



C.

3.2 Transportation

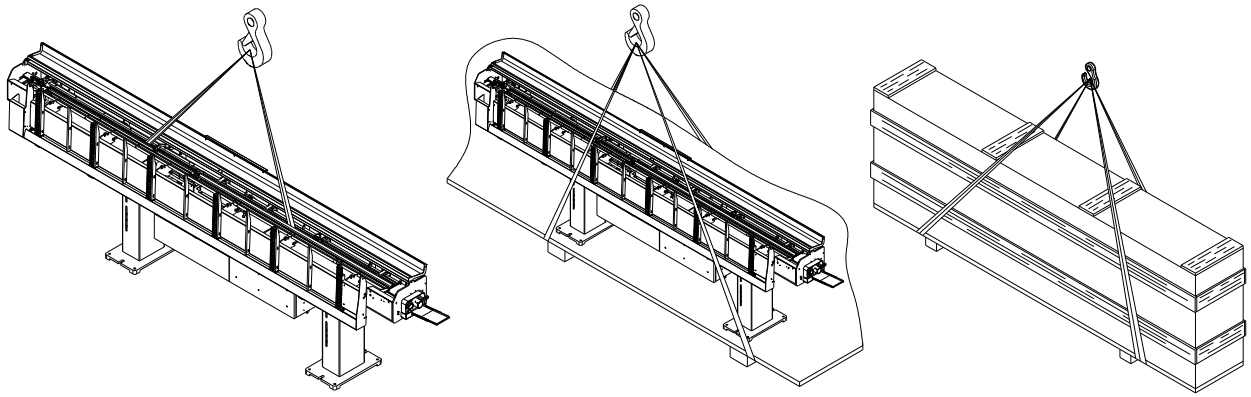
Verify the equipment to be used for moving the bar feeder is rate to safety lift the weight of the bar feeder plus the packaging material.

CAUTION

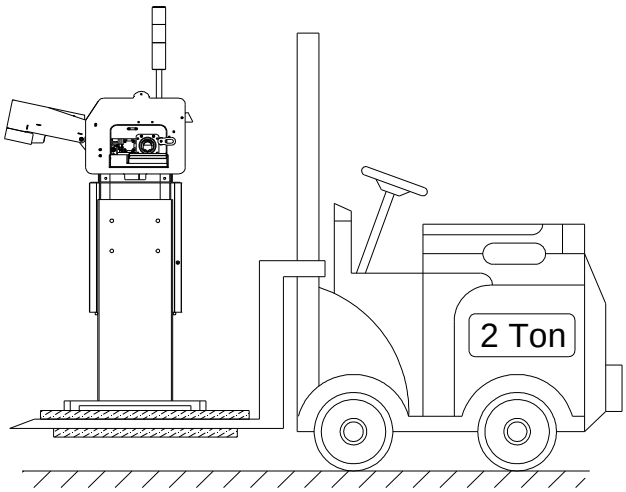
Lifting the bar feeder under the magazine with a lift truck or slings may cause damage to the machine.

3.2.1 Lifting by straps or slings

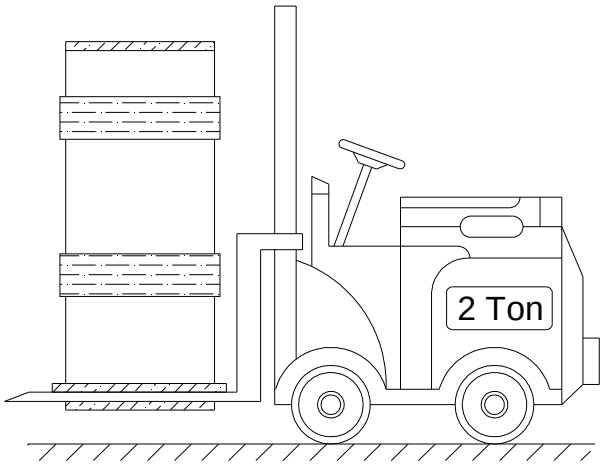
Hazard! It is possible to hurt you seriously, please be careful.



3.2.2 Lifting by lift truck



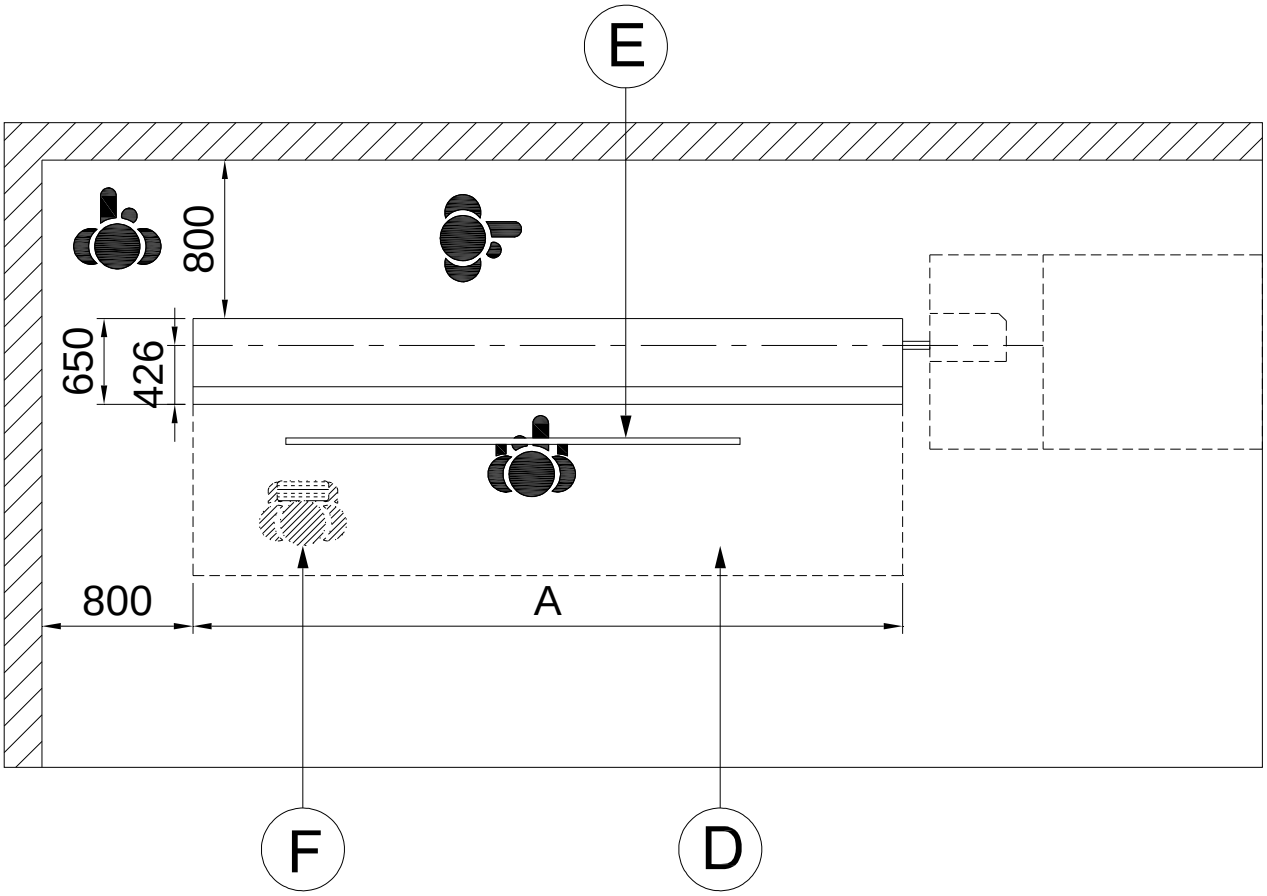
With Pallet



With Wooden Box

3.3 Installation area

The bar feeder must be bolted to a sound, reasonably level floor using anchor bolts. The area surrounding the machine must provide sufficient clearance the operator access to both sides and the near of machine as shown in the diagram below. Other necessaries are suitable lighting and compressor air supply. The bar feeder is not suitable for and can be adapted to use in an explosive surrounding.
Area: (D-Operator area)，(E-Material supply area)，(F-Remain removal area)



List 1. - Size of appearance

Type	Size	A (mm)
RANGER 112	27	3278 mm
	37	4600 mm

4. INSTALLATION

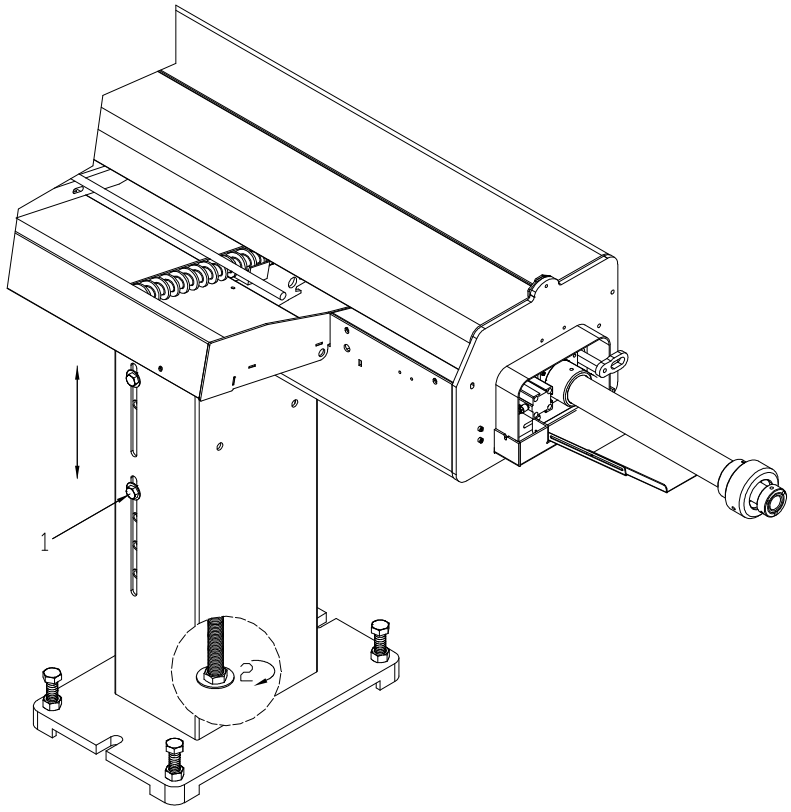
4.1 Bar feeder - Installation

Prior to beginning the bar feeder installation the lathe must be properly leveled. It is strongly recommended that the lathe be anchored to the floor to prevent it from shifting.

4.2 Height adjustment

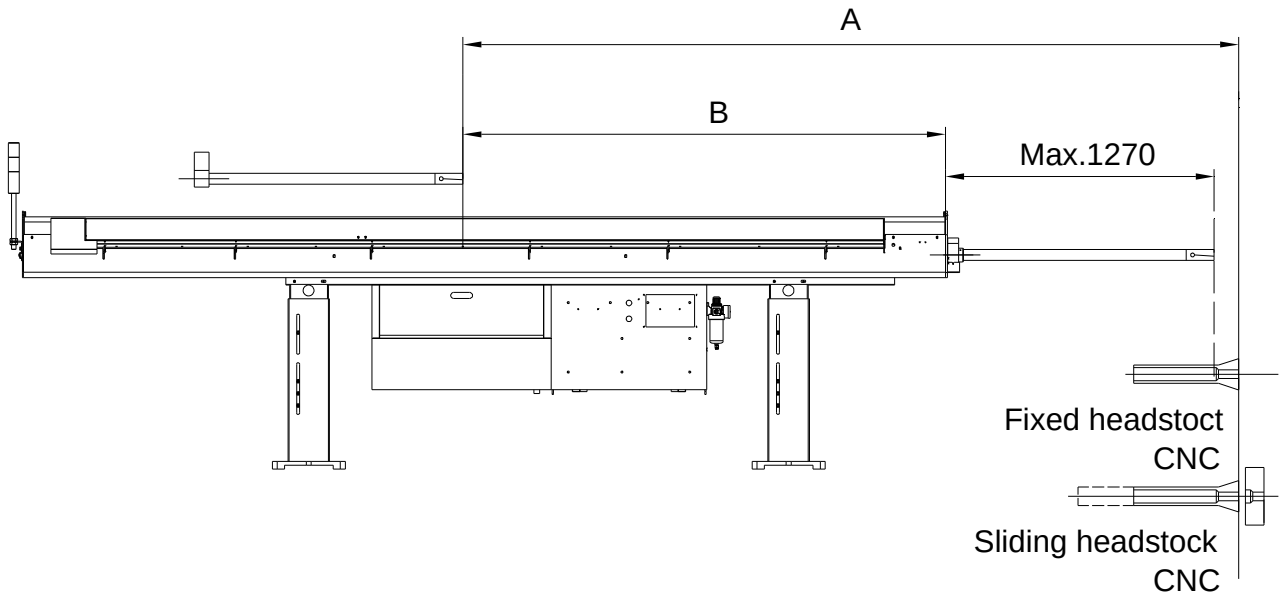
4.2.1 Disengage the screw (1).

4.2.2 Adjust the screw (2) and shift from up to down. Adjust the height to a straight line between the center of the bar feeder and the center of the lathe.



4.3 Initial position

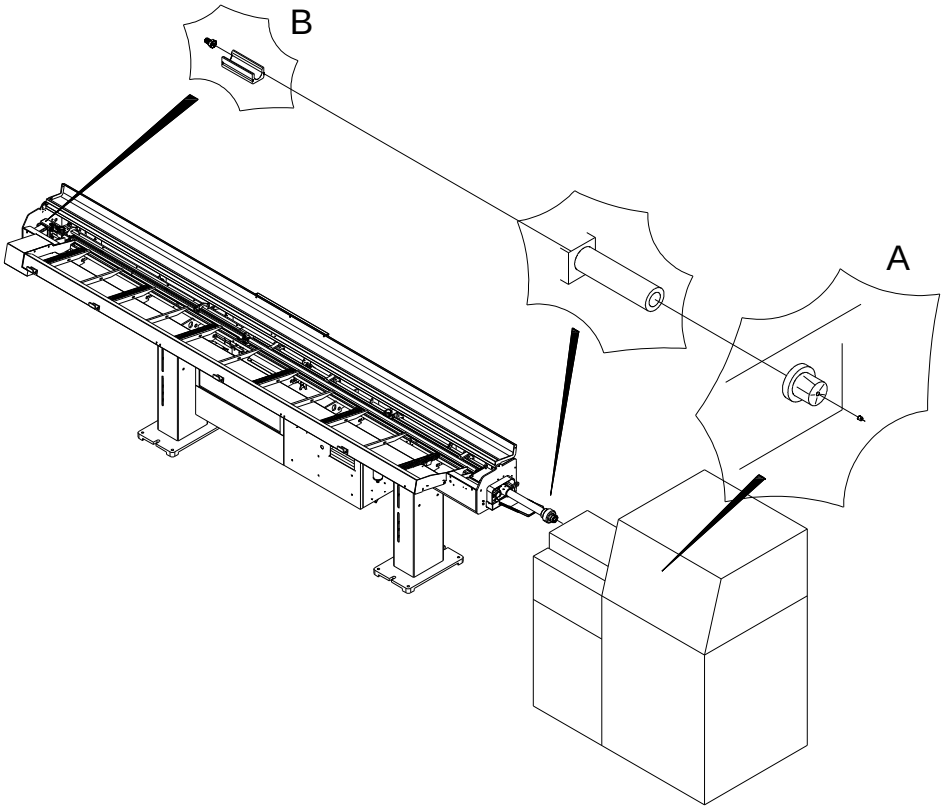
The bar feeder should set the proper distance from the lathe. The distance is as below:



Model	A	B
27	2700 mm	1720 mm
37	3785 mm	2750 mm

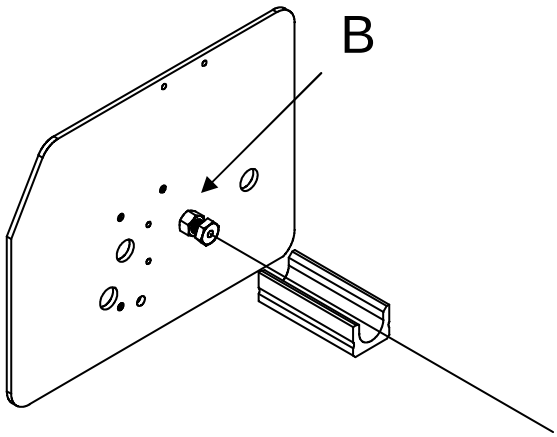
4.4 Adjustment of center

The bar feeder is aligned to the lathe spindle by use of a nylon string which is stretched between the lathe collet/chuck and alignment fitting at the rear plate of the bar feeder. This string indicates the centerline of two machines. Please prepare a nylon string (1mm) and pull it from the lathe (A) to the end of the bar feeder (B).



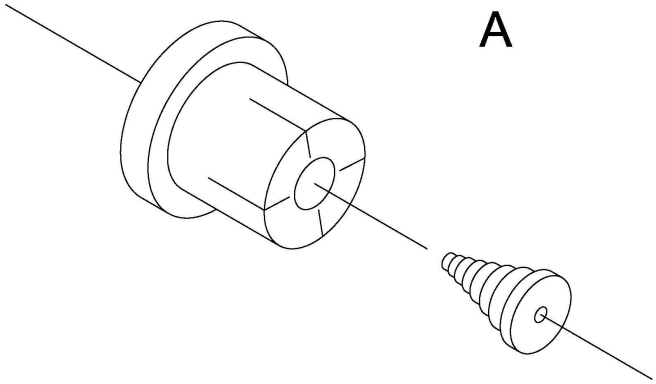
4.4.1 For rear plate of feeder

Secure nylon thread on to the axis screws (B point) of bar feeder, and then pull the thread through spindle hole.



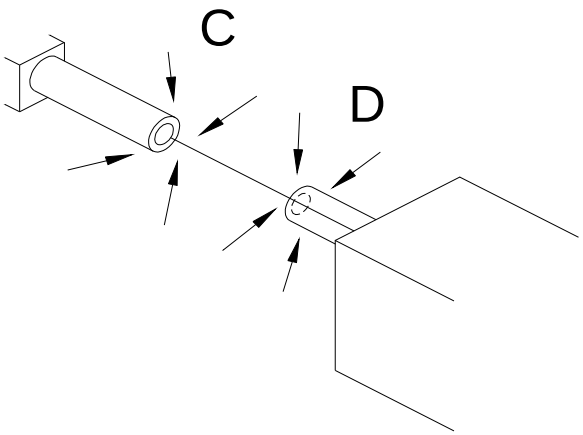
4.4.2 For collet/chuck of lathe

Insert the center tool into the lathe collect/chuck, then pull the nylon string to be straight.



4.4.3 Aligning the center line

The bar feeder is aligned by moving the front and rear stands so that the distance from the string to the centerline of the lathe spindle and the centerline of opening of the anti-vibration device is equal on all sides to within 0.15mm.



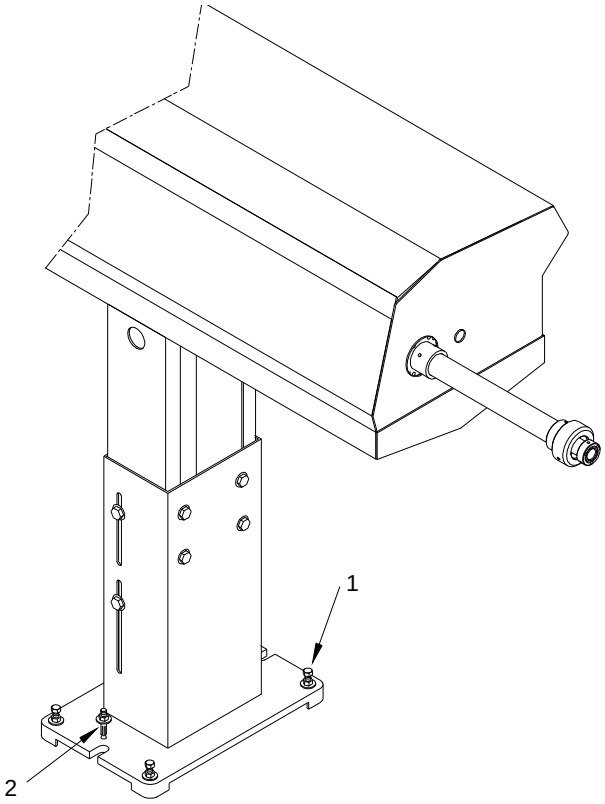
4.5 Securing and fastening of the bar feeder

CAUTION

Failure or bad to fix the bar feeder to the floor can be the main cause of bar feeder bad operation and resulting damaging.

Place steel anchor plates and spacer under the four outside corner of the bar feeder. Thread the 4 screws (1) fully and fixing the nuts.

Drill the floor (2) with Ø16mm (5/8 inch) and fix with expansion plugs.



4.6 Installation accessories

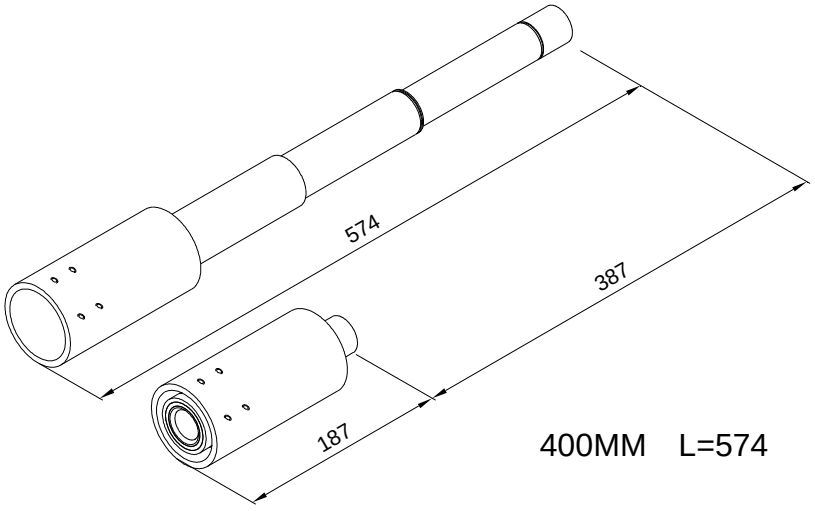
4.6.1 **Moveable anti-vibration device (OPTION):** The anti-vibration device is fixed at the end of the spindle of the lathe, using a bar to adjust the center of the anti-vibration.

4.6.2 **Synchronization connecting rod:** Fix the connecting rod at the movable anti-vibration and makes it move smoothly.

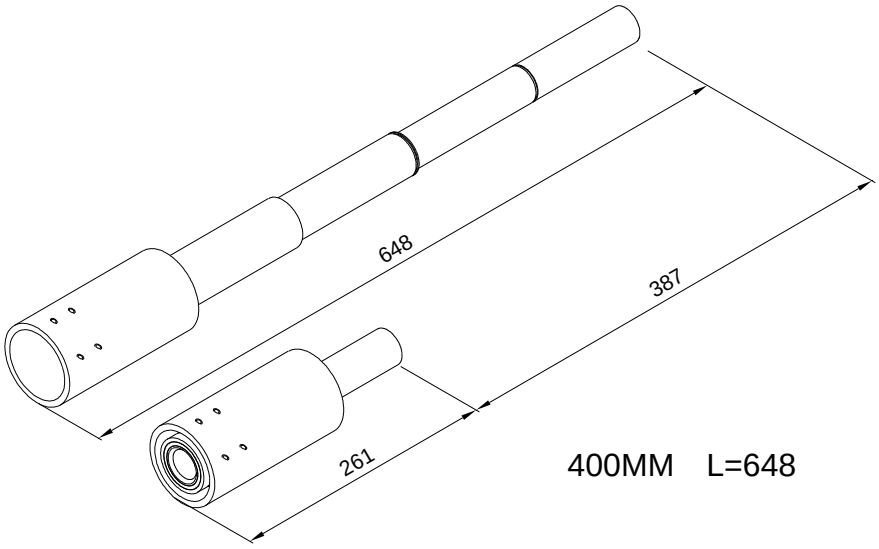
4.6.3 **Fixed front nose:** Fix it at the support of nose which is in front of the bar feeder.

4.6.4 **Telescopic front nose:** End of the telescopic front nose fix at the front of the telescopic front nose connects with the plate of the lathe.

4.6.5 **Oil ring:** Fix the oil ring in front of the fixed front nose or telescopic front nose.



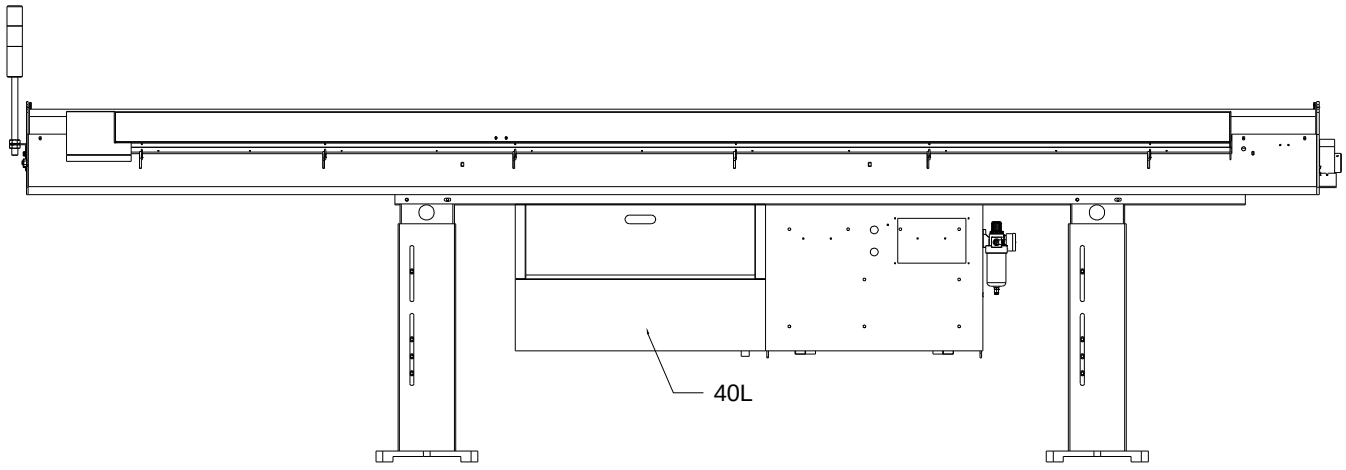
400MM L=574



400MM L=648

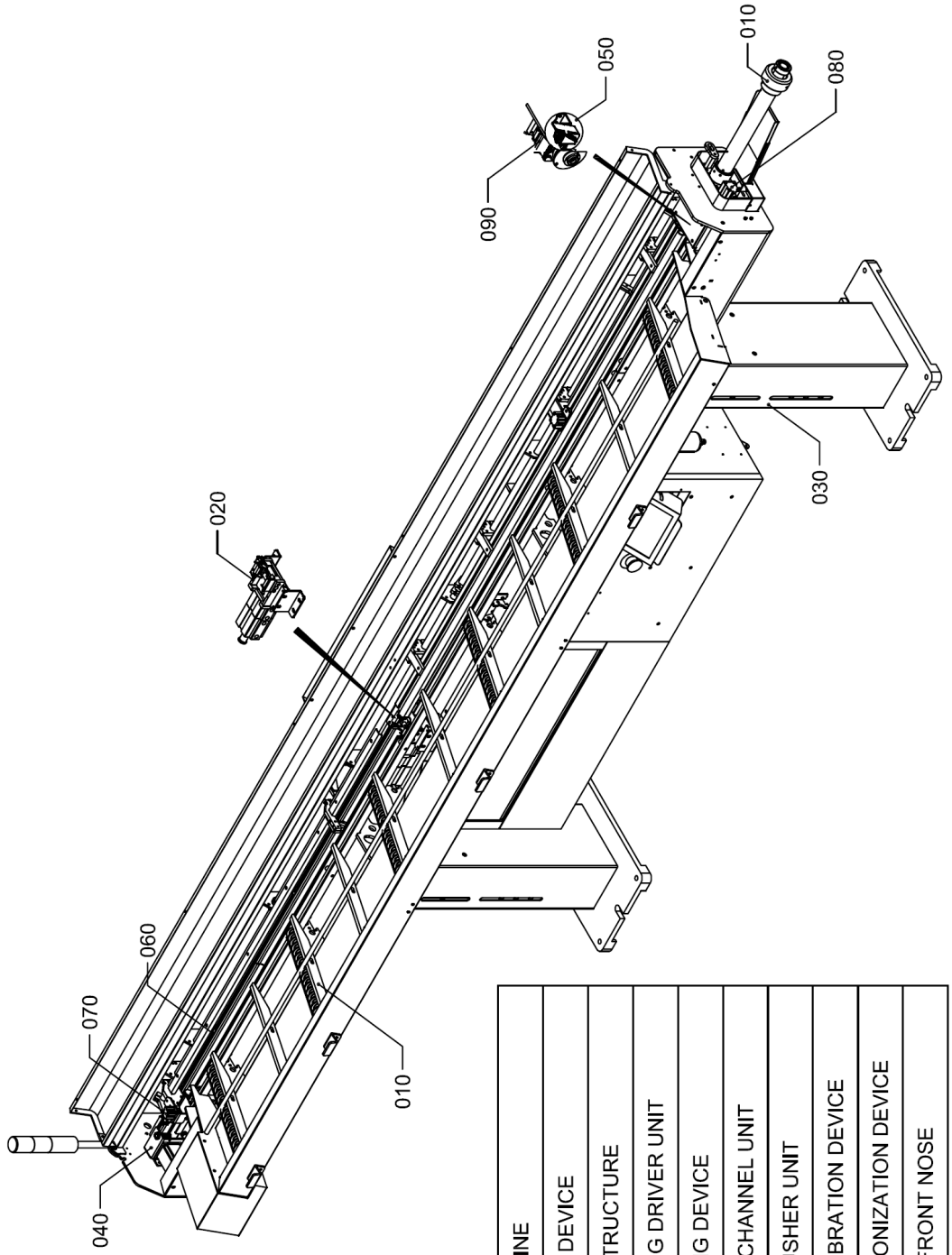
4.7 Guide channel lubricate

ISO and UNI brand	Brand	Description
CKB 100	Agip	Acer 100
	Api	Api Cis 100
	BP	Energol CS 100
	Castrol	Magna 100
	Chevron	Circulating Oil 100
	Elf	Movixa 100
	Esso	Nuto 100
	Fina	Solna 100
	IP	IP Hermea 100
	Kluber	Crucolan 100
	Mobil	Vectra Oil Heavy
	Olio FIAT	Daphne LPN 100
	Roloil	Arm V 100
	Shell	Vitrea 100 Tell us C 100
	Tam oil	Tell us C 100
	Texaco	Industrial Oil 100
	Total	Cortis 100
	Q8	Azolla ZS 100



5. ADJUSTMENT AND SETTING

5.1 Structure of the bar feeder



010	MAGAZINE
020	CLAMP DEVICE
030	MAIN STRUCTURE
040	FEEDING DRIVER UNIT
050	CUTTING DEVICE
060	GUIDE CHANNEL UNIT
070	BAR PUSHER UNIT
080	ANTI-VIBRATION DEVICE
090	SYCHRONIZATION DEVICE
100	FIXED FRONT NOSE

5.2 Adjust and fix the anti-vibration device

5.2.1 Load a bar using the bar feeder into the lathe and close lathe collet.

5.2.2 Press the Pre-Auto button , both Anti-vibration devices will close.

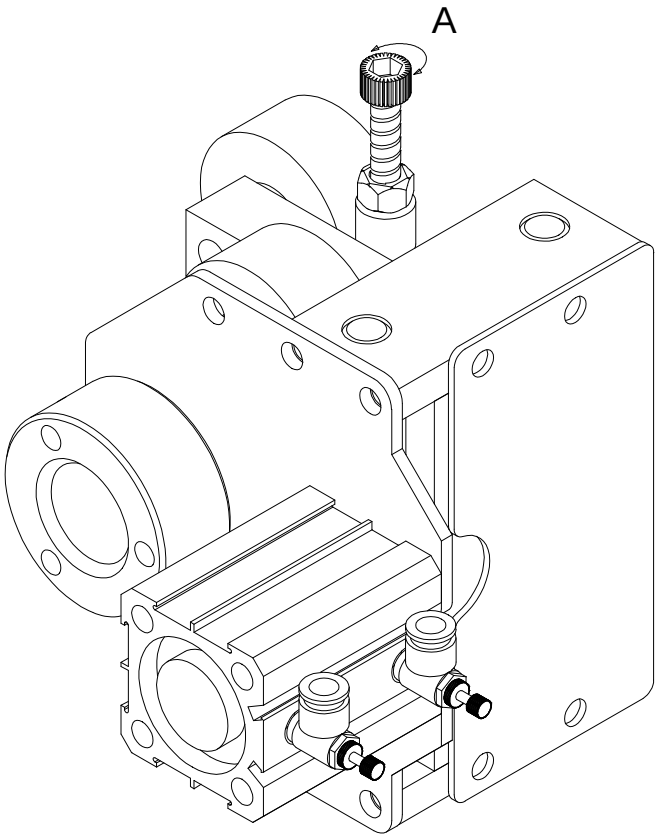
5.2.3 Back screw (A) off counterclockwise until no tension is felt on the screw

5.2.4 Press the Manual button , then the Pre-Auto Button , this will make sure rollers are closed onto bar.

5.2.5 Rotate screw (A) clockwise until tension is felt, continue to rotate screw clockwise for ¼ turn.

5.2.6 Tighten jam nut.

5.2.7 Press the manual button .

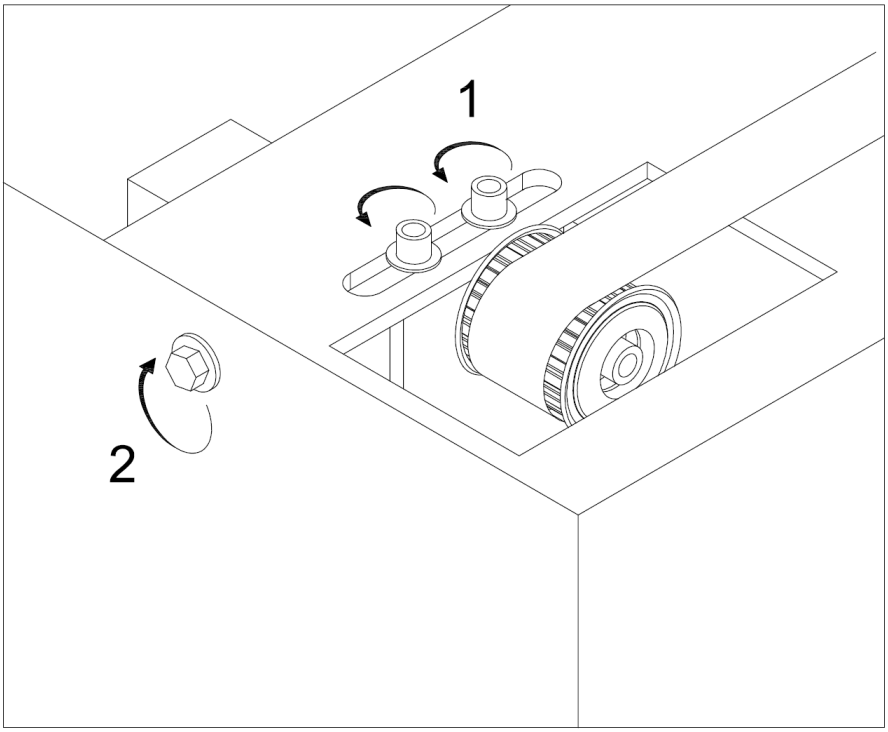


5.3 Pusher belt

5.3.1 Loosen locking screw (1) for the tensioner.

5.3.2 Rotate knob (2) clockwise to tighten the belt for suitable tension.

5.3.3 Tighten the locking screw (1).



6. OPERATIONS AND DESCRIPTION

6.1 Par storage distinction and preparation

CAUTION

Please don’t put the material out of standard.

The max length of material

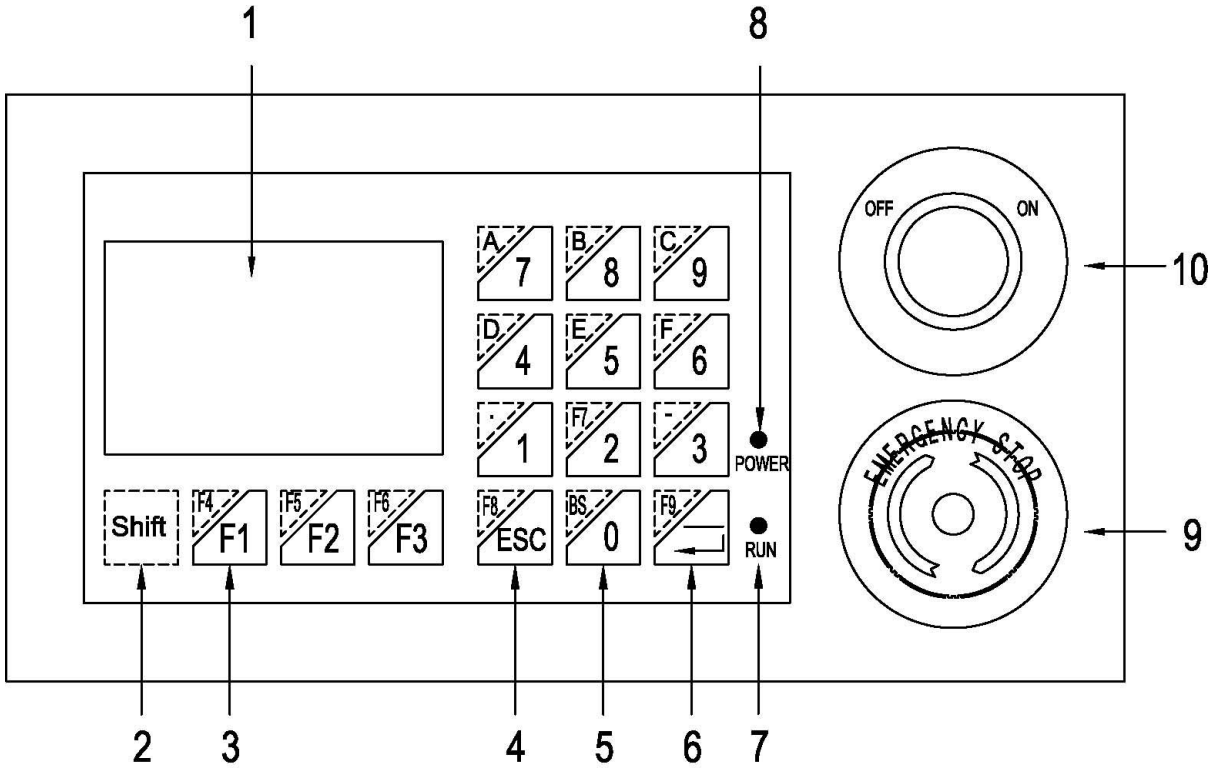
Type	Mod	Max length mm (ft)
RANGER 112	27	3278
	37	4600

INFORMATION

The flatness of material must be within 0.5mm/M.

6.2 Operation description

6.2.1 H/M function description

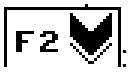


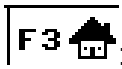
NO.	Function
1	LCD Display area
2	Shift
3	Function
4	ESC
5	Number
6	Enter
7	Run light
8	Power light
9	Emergency STOP
10	Start

6.2.1.1 H/M Program selection:

Press the key according to the indication on the display.

（1）  :Page up

（2）  :Page down

（3）  :Back to the main menu

6.2.1.2 Value of parameter selection:

（1） Input numbers as your request from 0 ~ 9.

（2） Press  again, the input is finished. If you want to give up the input that you set, press  to give up.

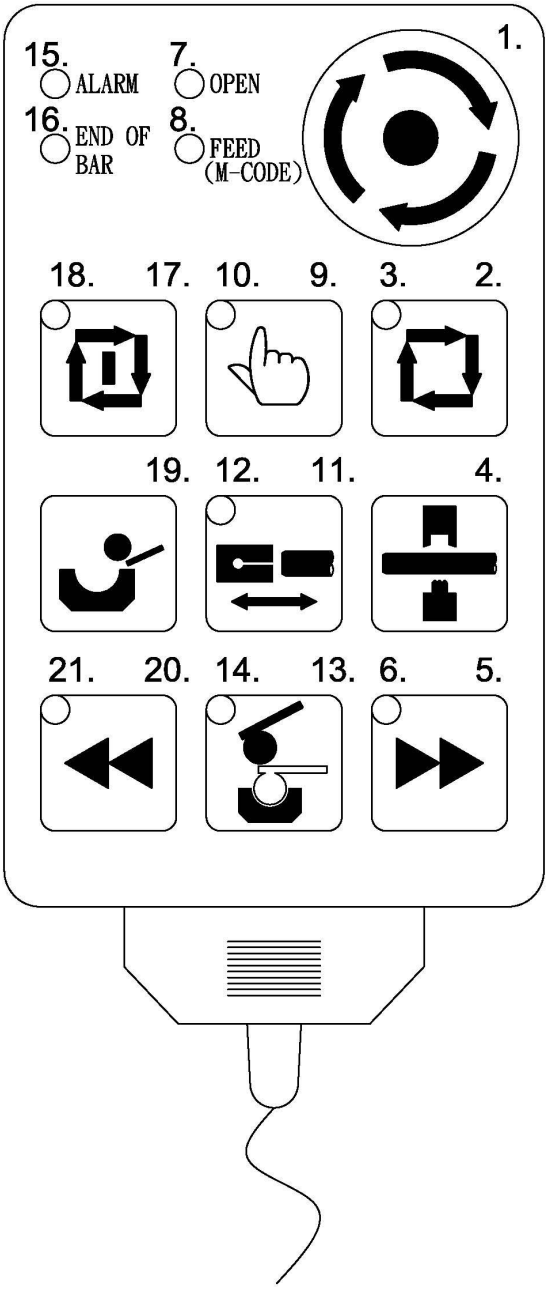
6.2.1.3 F1~F9 Function description:

（1） Select F1 ~ F3, please press these three keys directly.

（2） Select F4 ~ F9, please press and hold  key, and then select other keys as you want.

6.2.2 Description of remote control pendant

6.2.2.1 Description of button and indication light



NO.	Code	Function
1.	ES2	Emergency STOP
2.	DS6	Automatic mode
3.	LDS6	Automatic mode light
4.	DS10	Manual clamping
5.	DS1	Manual advance (Right) Manual retreat (Left)
6.	LDS1	Origin point light (Left)
7.	L3	Chuck open light
8.	L4	Allow feeding on
9.	DS7	Manual mode
10.	LDS7	Manual mode light
11.	DS3	Manual clamping in/out
12.	LDS3	Clamping in light
13.	DS4	Manual bar-pusher rise/down
14.	LDS4	Bar pusher down light
15.	L2	Alarm light
16.	L1	Bar end
17.	DS5	Automatic start
18.	LDS5	Automatic start light
19.	DS9	Manual loading
20.	DS2	Manual advance (Right) Manual retreat (Left)
21.	LDS2	+Z light (Left)

6.2.2.2 Operation description

(1) Advance / retreat at low-speed

(When the lathe on the left, the motion of  and  are opposite).

Advance at low-speed，press  and  .

Retreat at low-speed，press  and  .

(2) Automatic work operation (self-motion)

While  and  the guiding light to twinkle, press  and  start to work automatically. Or while  and  guiding light off, and either  or  is on, press  and  start to work automatically.

(3) Resetting the Bar Feeder Home Position

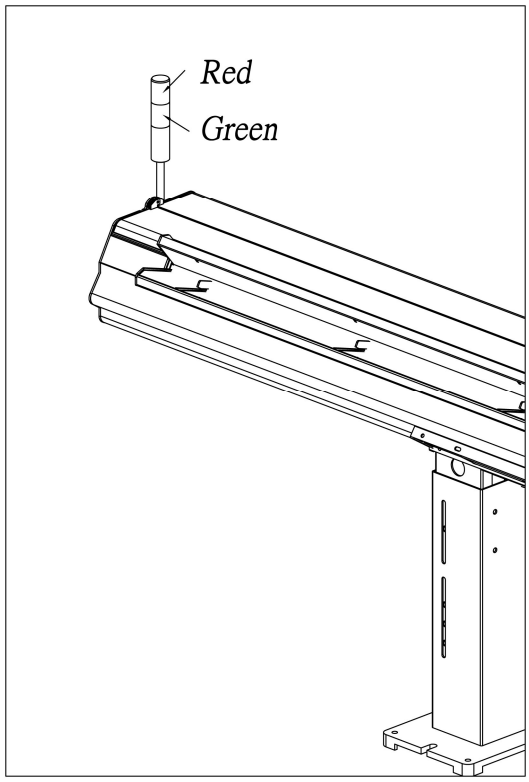
When  guide channel up/down light on, press  and  simultaneously for 3 seconds to begin resetting the bar feeder home position.

6.2.3 Indicator Light

When Red light is on, bar feeder is in emergency stop.

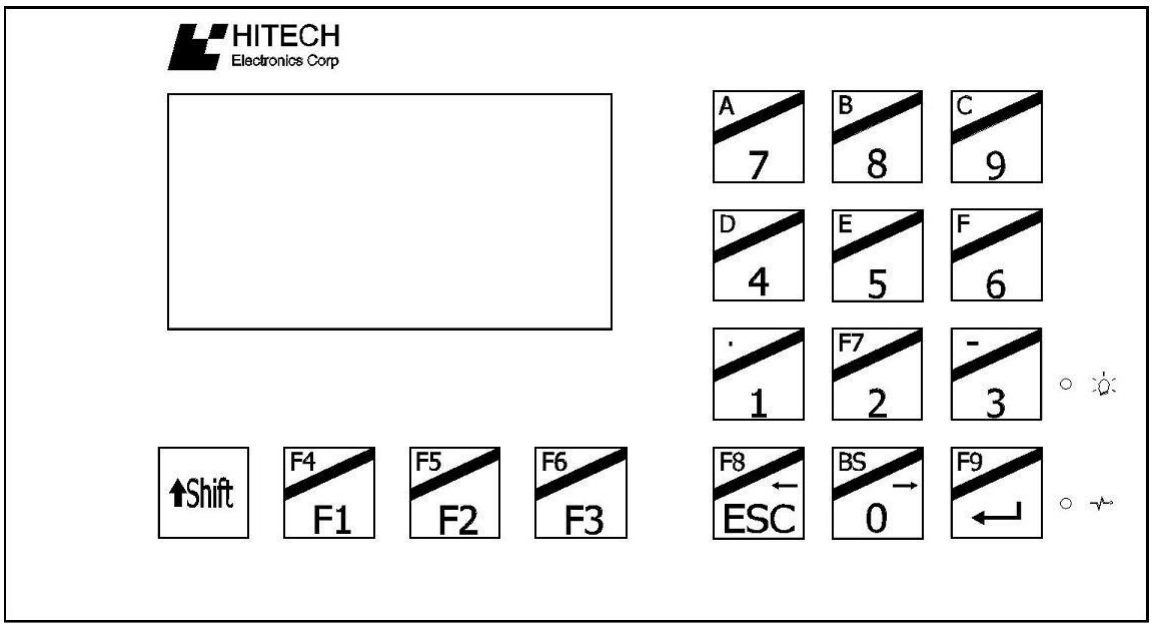
When Green light is on, bar feeder is i machining mode.

When Green light is flashing, bar feeder is in bar change operation.



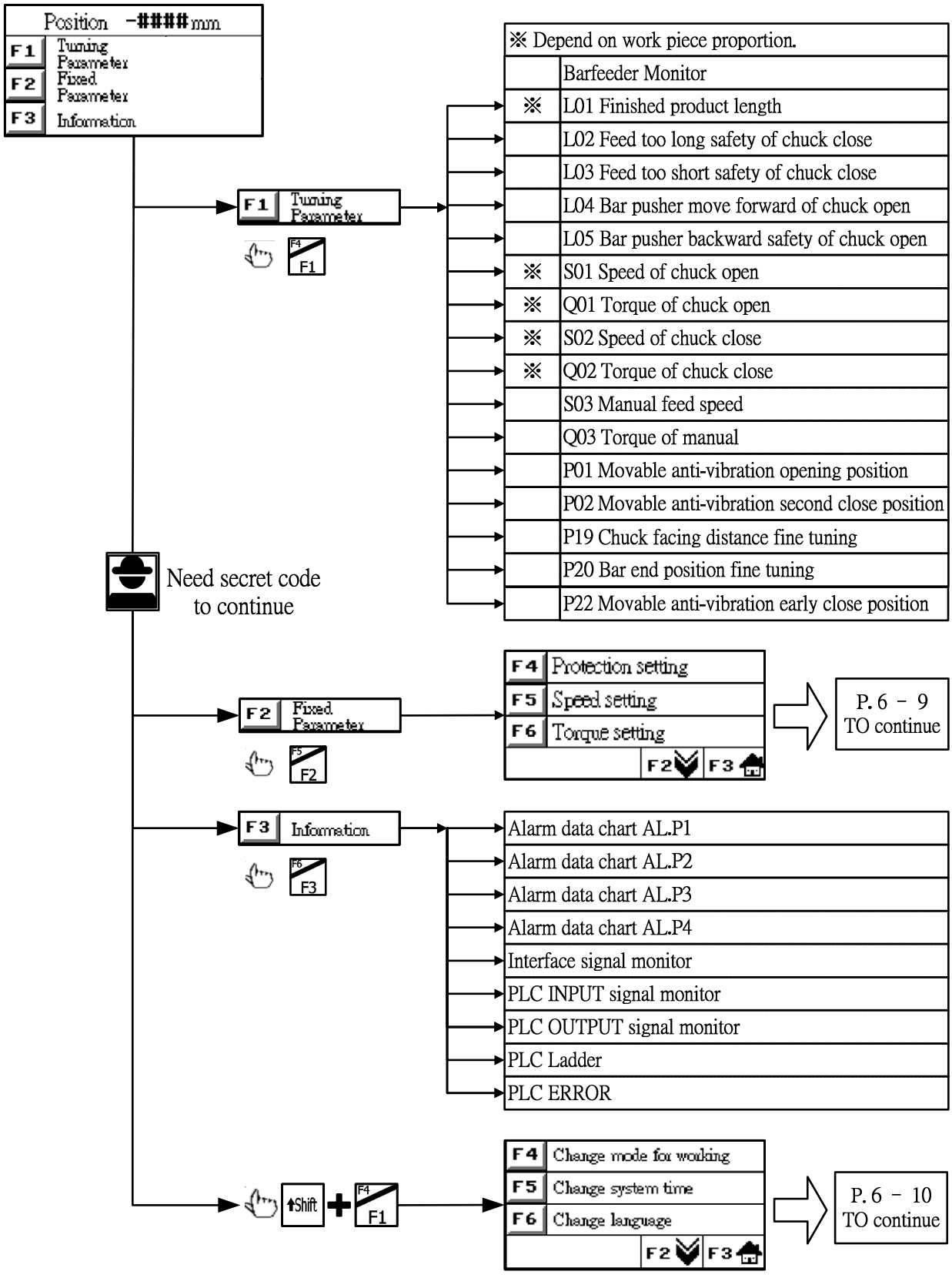
6.3 Description of settings and parameter

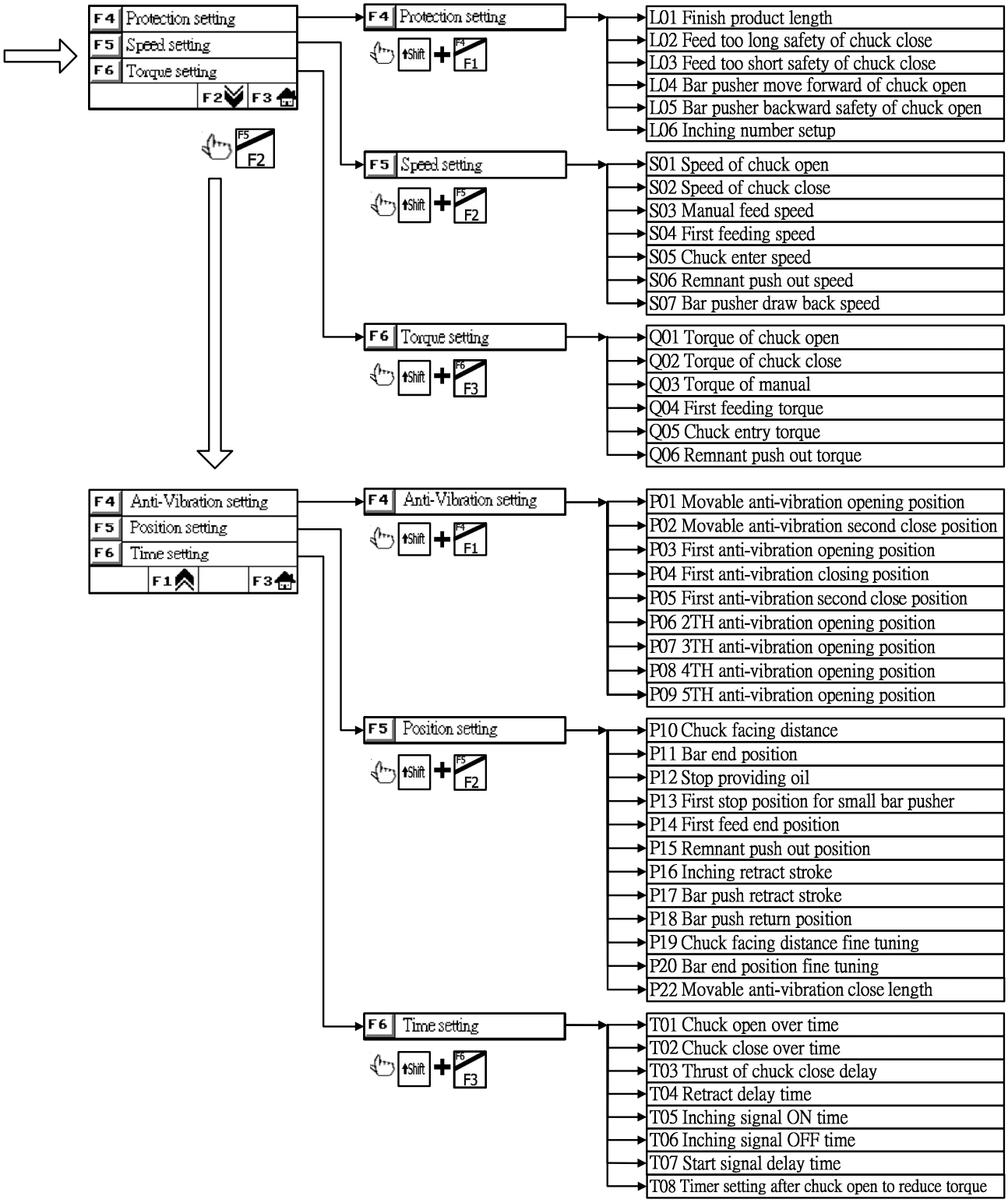
6.3.1 HMI Program selection

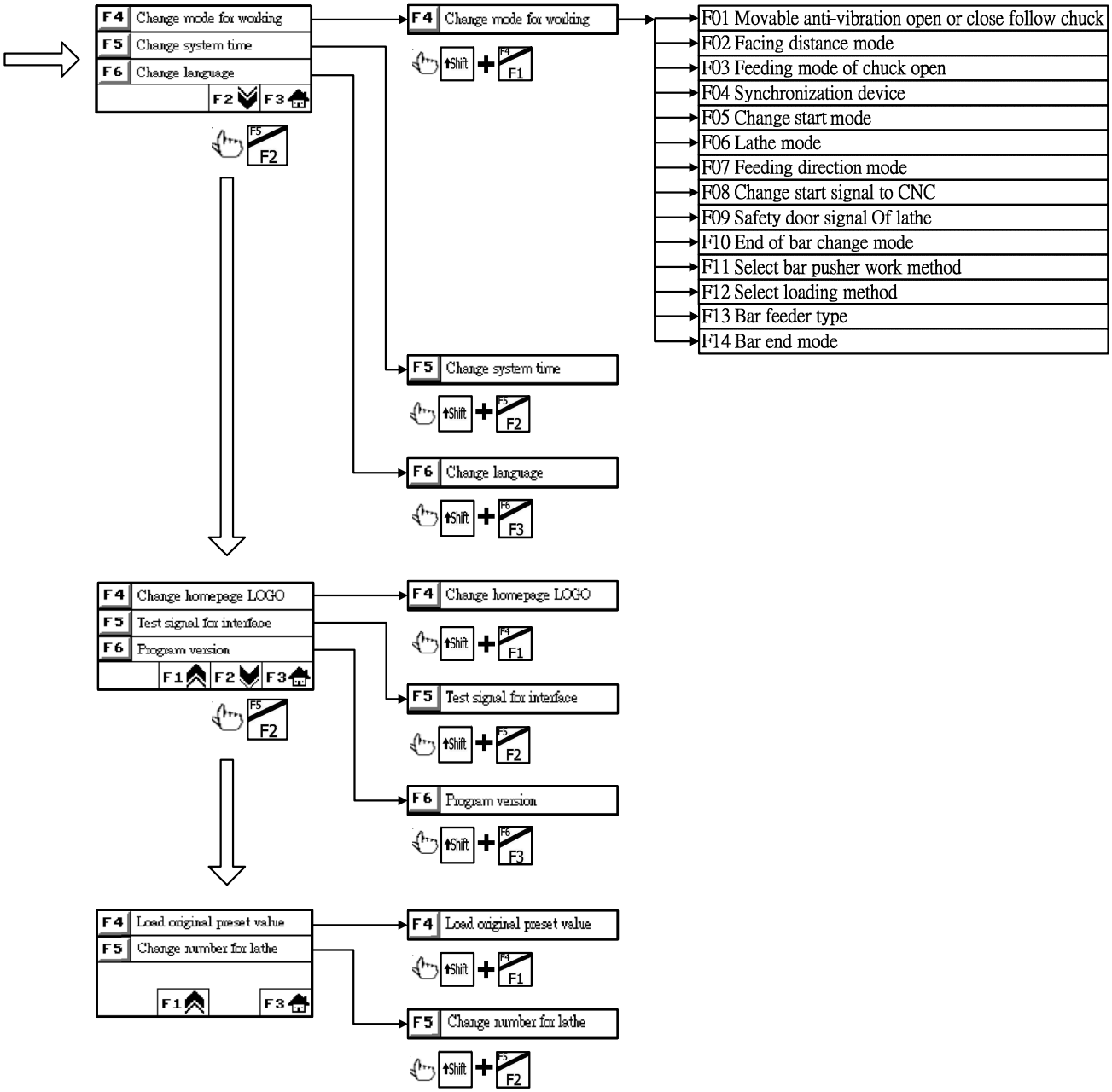


1. F1 F1 **Press the key:** F4 F1
2. F2 F2 **Press the key:** F5 F2
3. F3 F3 **Press the key:** F6 F3
4. F4 **Press the key:** Shift + F4 F1
5. F5 **Press the key:** Shift + F5 F2
6. F6 **Press the key:** Shift + F6 F3
7. F7 **Press the key:** Shift + F7 2
8. F8 **Press the key:** Shift + F8 ESC
9. F9 **Press the key:** Shift + F9

6.3.2 Parameter picture driftage




F4 Protection setting
F5 Speed setting
F6 Torque setting
F2
F3
F5
F2
F4 Protection setting
Shift
F4
F1
L01 Finish product length
L02 Feed too long safety of chuck close
L03 Feed too short safety of chuck close
L04 Bar pusher move forward of chuck open
L05 Bar pusher backward safety of chuck open
L06 Inching number setup
F5 Speed setting
Shift
F5
F2
S01 Speed of chuck open
S02 Speed of chuck close
S03 Manual feed speed
S04 First feeding speed
S05 Chuck enter speed
S06 Remnant push out speed
S07 Bar pusher draw back speed
F6 Torque setting
Shift
F6
F3
Q01 Torque of chuck open
Q02 Torque of chuck close
Q03 Torque of manual
Q04 First feeding torque
Q05 Chuck entry torque
Q06 Remnant push out torque
F4 Anti-Vibration setting
F5 Position setting
F6 Time setting
F1
F3
F4 Anti-Vibration setting
Shift
F4
F1
P01 Movable anti-vibration opening position
P02 Movable anti-vibration second close position
P03 First anti-vibration opening position
P04 First anti-vibration closing position
P05 First anti-vibration second close position
P06 2TH anti-vibration opening position
P07 3TH anti-vibration opening position
P08 4TH anti-vibration opening position
P09 5TH anti-vibration opening position
F5 Position setting
Shift
F5
F2
P10 Chuck facing distance
P11 Bar end position
P12 Stop providing oil
P13 First stop position for small bar pusher
P14 First feed end position
P15 Remnant push out position
P16 Inching retract stroke
P17 Bar push retract stroke
P18 Bar push return position
P19 Chuck facing distance fine tuning
P20 Bar end position fine tuning
P22 Movable anti-vibration close length
F6 Time setting
Shift
F6
F3
T01 Chuck open over time
T02 Chuck close over time
T03 Thrust of chuck close delay
T04 Retract delay time
T05 Inching signal ON time
T06 Inching signal OFF time
T07 Start signal delay time
T08 Timer setting after chuck open to reduce torque

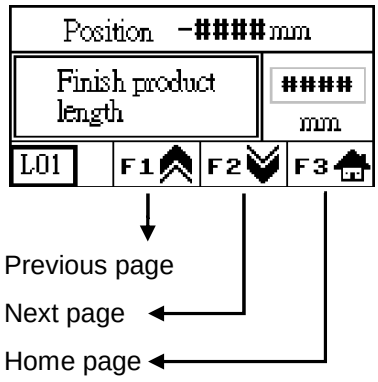

F4 Change mode for working
F5 Change system time
F6 Change language
F2
F3
F5
F2
F4 Change mode for working
Shift
F4
F1
F01 Movable anti-vibration open or close follow chuck
F02 Facing distance mode
F03 Feeding mode of chuck open
F04 Synchronization device
F05 Change start mode
F06 Lathe mode
F07 Feeding direction mode
F08 Change start signal to CNC
F09 Safety door signal Of lathe
F10 End of bar change mode
F11 Select bar pusher work method
F12 Select loading method
F13 Bar feeder type
F14 Bar end mode
F5 Change system time
Shift
F5
F2
F6 Change language
Shift
F6
F3
F4 Change homepage LOGO
F5 Test signal for interface
F6 Program version
F1
F2
F3
F5
F2
F4 Change homepage LOGO
Shift
F4
F1
F5 Test signal for interface
Shift
F5
F2
F6 Program version
Shift
F6
F3
F4 Load original preset value
F5 Change number for lathe
F1
F3
F4 Load original preset value
Shift
F4
F1
F5 Change number for lathe
Shift
F5
F2

6.3.3 Description of settings and parameter

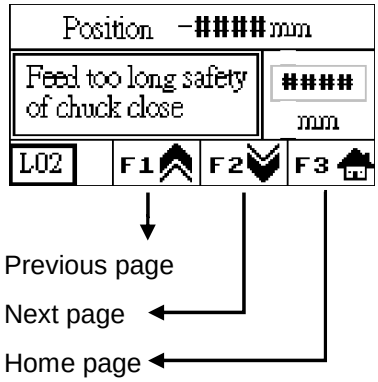
F1 Turning parameter【User parameter】		
Parameter NO	**Parameter name**	**Parameter description**
	Barfeeder Monitor	
L01	Finished product length	Use the Bar end position to generate a signal for bar end.
L02	Feed too long safety of chuck close	Prevents bars from feeding over the length of finished product. To disable parameter function, please set the value to zero.
L03	Feed too short safety of chuck close	Prevents bars from feeding length less than finished product. To disable parameter function, please set the value to zero.
L04	Bar pusher move forward of chuck open	Under automatic mode, the bar pusher move forward and the distance is large than the setting value during chuck opened.
L05	Bar pusher backward safety of chuck open	Under automatic mode, when the bar pusher move backward and the distance is large than the setting value during chuck opened.
S01	Speed of chuck open	The speed of the bar pusher move forward under automatic mode and the chuck is opened.
Q01	Torque of chuck open	The torque of the bar pusher move forward when the chuck is opened under automatic mode.
S02	Speed of chuck close	The speed of the bar pusher move forward under automatic mode and the lathe chuck is closed.
Q02	Torque of chuck close	The torque of the bar pusher moves forward when the chuck is closed under automatic mode.
S03	Manual feed speed	The motor turning speed when the bar pusher move forward under manual mode.
Q03	Torque of manual	The motor torque of the bar pusher moves forward or backward under manual mode.
P01	Movable anti-vibration opening position	The position of the movable anti-vibration device opened under automatic operation.
P02	Movable anti-vibration second close position	The Second close position of movable anti-vibration device stands for the position of bar pusher is over the value of parameter, **P01;** the anti-vibration can operate the second close function to clamp bar pusher.
P19	Chuck facing distance fine tuning	Fine tuning for chuck facing position as the datum of chuck facing distance **P10**. If the adjustment quantity is less than 200 or large than 200, please adjust the value of chuck facing distance **P10**.
P20	Bar end position fine tuning	Fine tuning for the bar end position. If the fine tuning quantity is less than 200 or large than 200, then adjust the parameter **P11**, bar end position value.
P22	Movable anti-vibration early close position	Under Auto-Mode, Anti-vibration Device will close when bar pusher reached this parameter setup position.

6.3.4 Parameter application

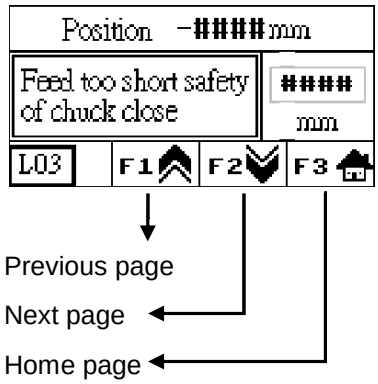
6.3.4.1 Fixed parameter / enter password “258”



Parameter description: The finished product length will be the workpiece length adding the cutter thickness. This parameter setting may affect the bar end setting. Setting method: Input the required length. For example: Workpiece 47mm + thickness of cutter 3mm = The finished product length 50mm. So we will set finished product Length to be 50mm.	
2.7XL Generally value:	Setting range: 0~2000
3.7XL Generally value:	Setting value:

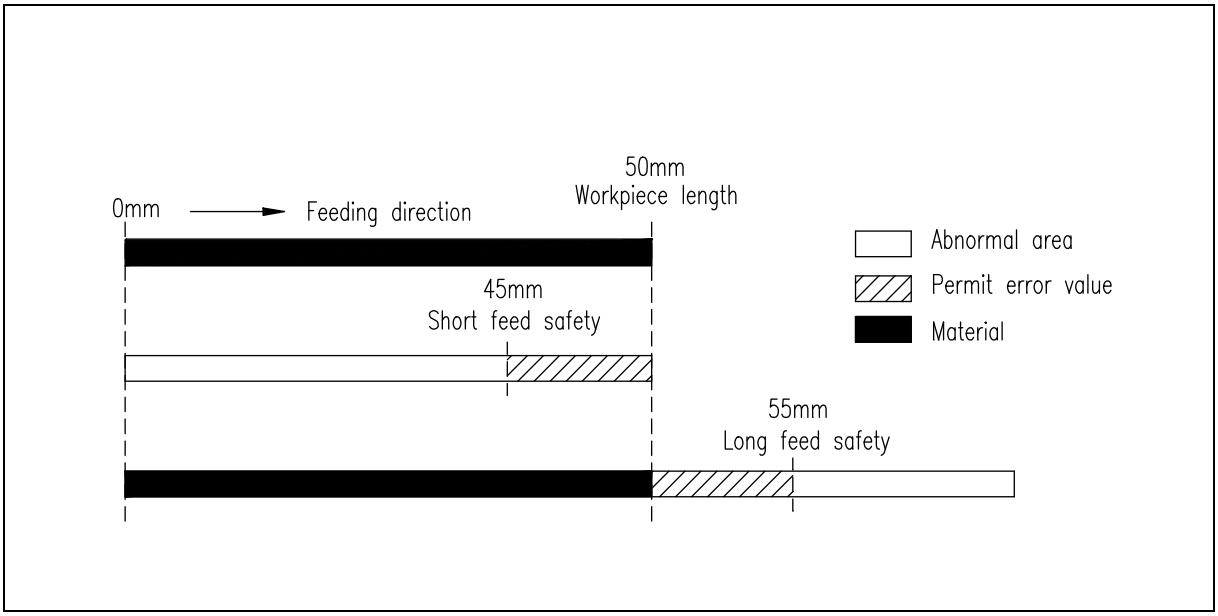


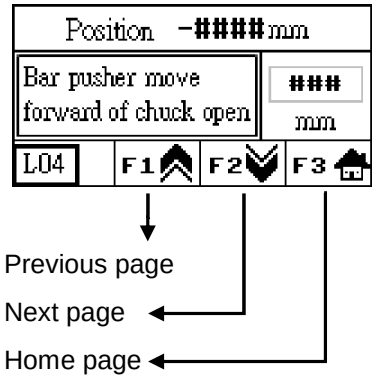
Parameter description: This parameter setting will let feed material more stable and ensure the material to be sent to request location. But if no need to use this function that you can set it to be “0” directly. Setting method: This parameter will be finished product length to add 5 mm automatically after finished product length setting. This parameter can also be set finished product length to add tolerance. Ex: Refer to figure 1: Finished product length + Tolerance = Long feed safety.	
2.7XL Generally value:	Setting range: 0~2200
3.7XL Generally value:	Setting value:



Parameter description:	This parameter setting will let feed material more stable and ensure the material to be sent to request location. But if no need to use this function that you can set it to be “0” directly.
Setting method:	This parameter will be finished product length to deduct 5 mm automatically after finished product length setting. This parameter can also be set finished product length to deduct tolerance.
Ex:	Refer to figure 1: Finished product length - Tolerance = Short feed safety.
2.7XL Generally value:	Setting range: 0~2200
3.7XL Generally value:	Setting value:

(Figure 1)



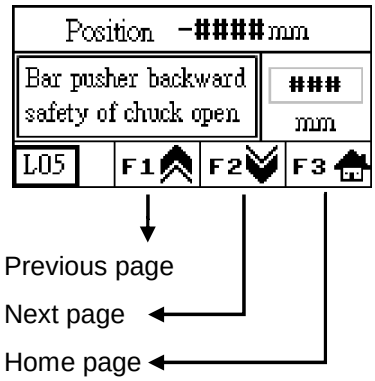


Parameter description: In automatic mode to set the pusher safety distance during chuck open. If pusher exceeds distance longer than this safety distance that the bar feeder will alarm.

Setting method: Input the required length.

Note: The parameter is disabled if set to zero.

2.7XL Generally value:	Setting range: 0~550
3.7XL Generally value:	Setting value:

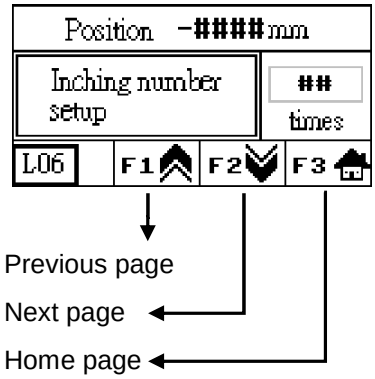


Parameter description: In automatic mode to set the pusher safety distance during chuck open. If pusher retreat distance is longer than this safety distance that the bar feeder will alarm.

Setting method: Input the required length.

Note: The parameter is disabled if set to zero.

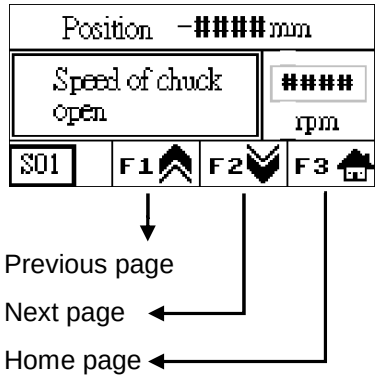
2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:



Parameter description: During changing the new bar and the bar pusher stocks or cannot push the new bar toward to the chuck facing position, bar pusher will start the inching movement and the frequency according to this setting value. If the new bar fails to reach chuck facing position and inching frequency exceeds the setting value then bar feeder will show **Alarm16**.

Setting method: Input the number of required inching movement times.

2.7XL Generally value:	Setting range: 0~50
3.7XL Generally value:	Setting value:

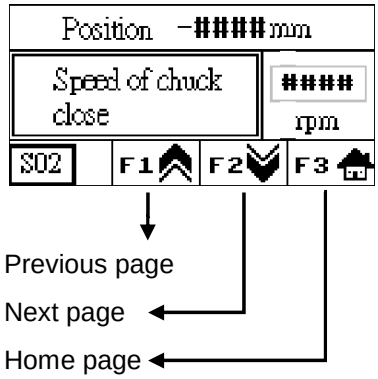


Parameter description: The speed of the pusher during in automatic mode when lathe chuck open.

Setting method: According to the bar material size and torque of chuck close to adjust speed.

Note: When setting value is too high it could cause servo failure.

2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:

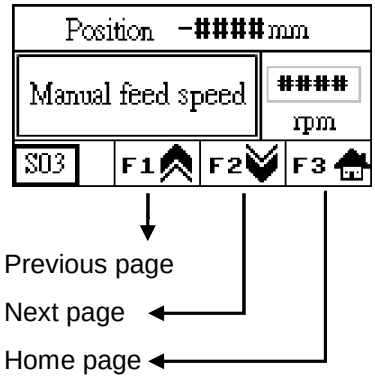


Parameter description: The speed of the pusher during in automatic mode when lathe chuck close.

Setting method: According to the bar material size and torque of chuck open to adjust speed.

Note: When setting value is too high it could cause servo failure.

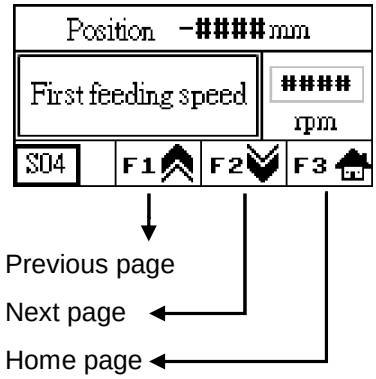
2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:



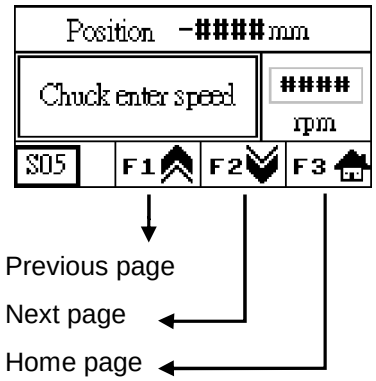
Parameter description: The pusher speed of manual operation.

Setting method: According to the required speed and manual operation torque to adjust speed.

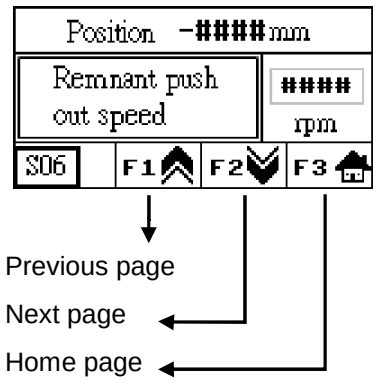
2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:



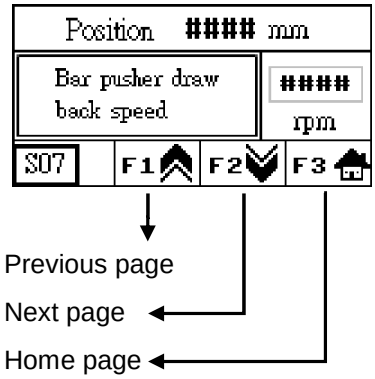
Parameter description:	The first bar material feeding means guide channel open and bar pusher raising up. The first bar material feeding speed is the pre-feeding pusher speed as the pusher rising up.
Setting method:	Input the required speed to be the first bar material feeding speed parameter.
Note:	If the speed of pusher is too fast that bar material will pass clamping device to let clamping device miss bar material.
2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:



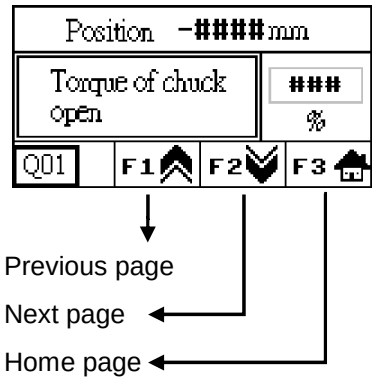
Parameter description:	The speed of pusher entering chuck means that the speed of pusher pushes the new bar material to lathe chuck facing position.
Setting method:	According to required speed and torque of entering chuck to adjust speed.
Note:	Set actual speed to avoid crashing.
2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:



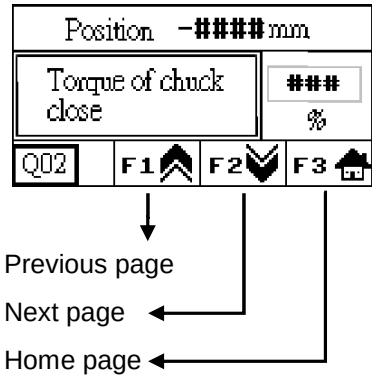
Parameter description:	The speed of the bar pusher pushes out remnant when receiving bar end signal.
Setting method:	Input the required speed.
Note:	Set actual speed to avoid crashing.
2.7XL Generally value:	Setting range: 0~500
3.7XL Generally value:	Setting value:



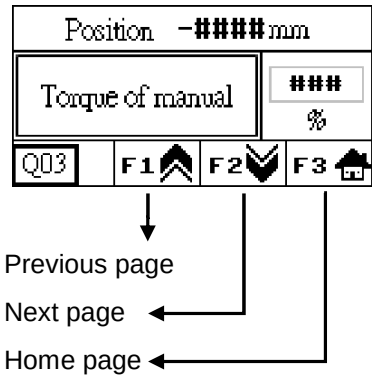
Parameter description: Retracting speed of the bar pusher in manual or automatic mode. Setting method: Input the required speed.	
2.7XL Generally value:	Setting range: 0~1000
3.7XL Generally value:	Setting value:



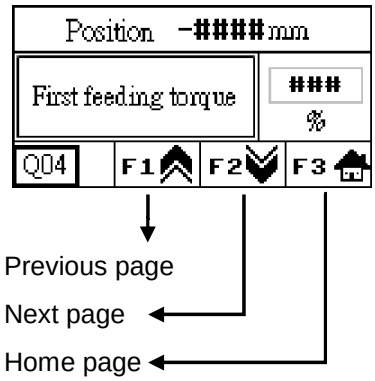
Parameter description: The torque of pusher moves forward when automatic mode and lathe chuck open. Setting method: According to the bar material size and speed of chuck open to adjust torque. Note: When setting value is too high it could cause servo failure.	
2.7XL Generally value:	Setting range: 0~800
3.7XL Generally value:	Setting value:



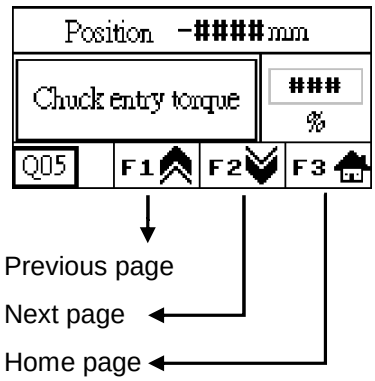
Parameter description: The torque of pusher moves forward when automatic mode and lathe chuck close. Setting method: According to the bar material size and speed of lathe chuck close to adjust torque. Note: When setting value is too high it could cause servo failure.	
2.7XL Generally value:	Setting range: 0~800
3.7XL Generally value:	Setting value:



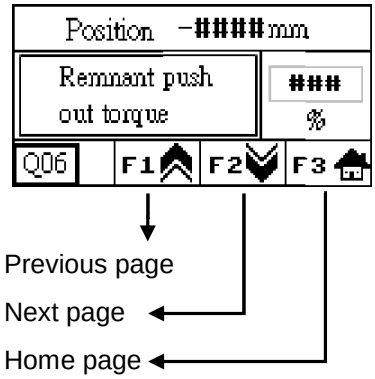
Parameter description: The torque of bar pusher moves forward in manual operation mode. Setting method: According to required torque and speed of manual operation mode to adjust torque.	
2.7XL Generally value:	Setting range: 0~800
3.7XL Generally value:	Setting value:



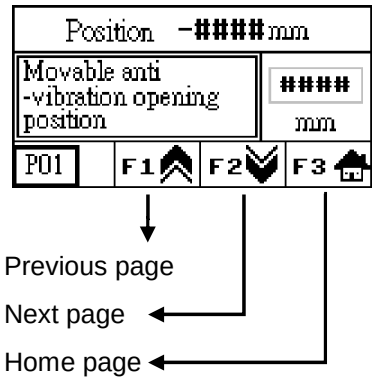
Parameter description: The torque of pusher entering chuck means the torque of pusher when pushing the new material to chuck facing. Setting method: According to required torque and speed of manual mode to adjust torque.	
2.7XL Generally value:	Setting range: 0~800
3.7XL Generally value:	Setting value:



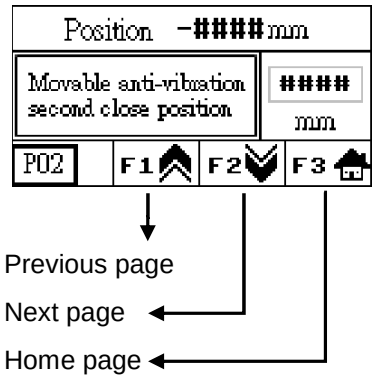
Parameter description: The torque of pusher entering chuck means torque of pusher when loading new bar material and pushing to facing position. Setting method: According to required torque and speed of entering chuck to adjust torque. Note: The setting value is too large will cause crashing.	
2.7XL Generally value:	Setting range: 0~800
3.7XL Generally value:	Setting value:



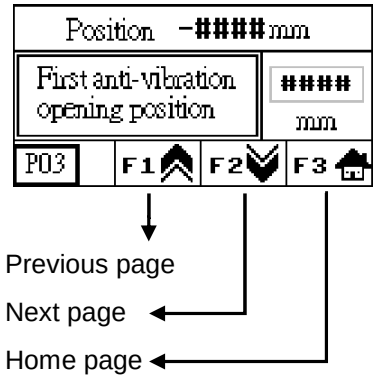
Parameter description: The torque of the bar pusher pushes out remnant when receiving bar end signal. Setting method: Input the required torque. Note: The setting value is too large will cause crashing.	
2.7XL Generally value:	Setting range: 0~800
3.7XL Generally value:	Setting value:



Parameter description: In automatic mode anti-vibration device open position. Setting method: There are two open positions as following. 1. Let lathe spindle move to Z limit position and pusher move forward nearby anti-vibration .Then input the current position. 2. Let lathe spindle move to spindle retreating position when working mode and lathe chuck open. Then move pusher forward nearby anti-vibration .Then input the current position.	
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:



Parameter description: Move anti-vibration device will do the second close action to clamp bar pusher when bar pusher passed anti-vibration open position. Setting method: This position will be movable anti-vibration open position to add 150 mm. Note: To disable this parameter function, set the value to zero.	
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:

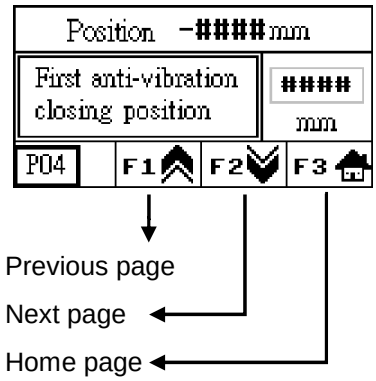


Parameter description: In automatic mode setting 1st Anti-Vibration Device open position.

Setting method: In manual mode collet will be pushed forward until 30~50mm before 1st anti vibration device. Then input the current position.

Note: First anti–vibration should be opened before the collet will be arrived to avoid the material was separated from the collet.

2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:

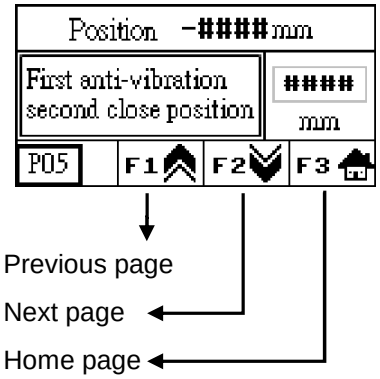


Parameter description: In automatic mode the pre-feeding pusher will push bar material when the pusher rising. Then anti vibration device will open when pusher pushes bar material to touch chuck facing sensor.

Setting method: Input the required length.

Note: To disable this parameter function, set the value to zero.

2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:

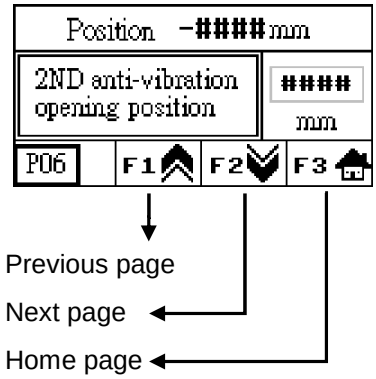


Parameter description: Under Auto-Mode, this parameter is to setup how much distance to go before the clamp of Anti-vibration Device closes again, after passing "First anti-vibration opening position."

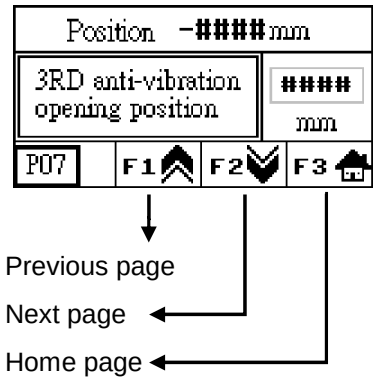
Setting method: Input the required length.

Note: To disable this parameter function, set the value to zero.

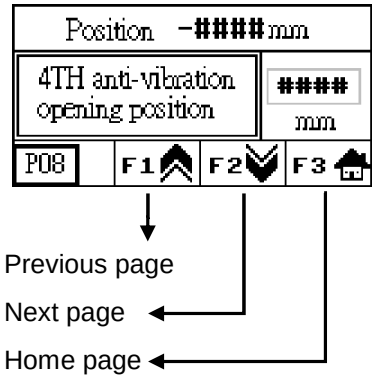
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:



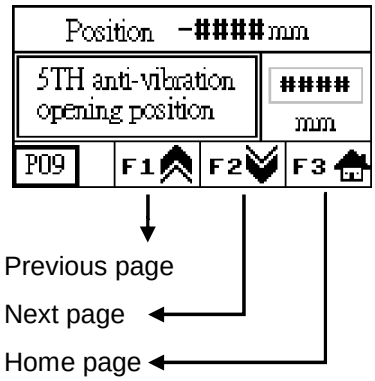
Parameter description: 2nd Anti-Vibration Device open position in working mode. Setting method: In manual mode pusher will be pushed forward until 30~50mm before 2nd anti vibration device. Then input the current position. Note: The Second anti–vibration should be opened before the end of the push bar will be arrived to avoid the material was separated from the collet.	
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:



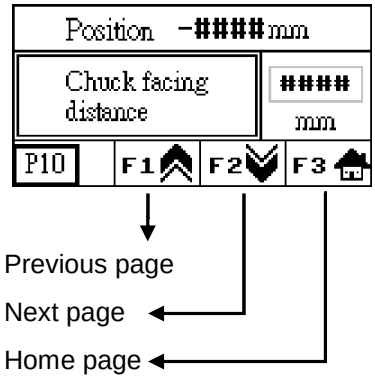
Parameter description: 3rd Anti-Vibration Device open position in working mode. Setting method: In manual mode pusher should be pushed 30~50mm before 3rd anti vibration device. Then input the current position. Note: The Third anti–vibration should be opened before the end of the push bar will be arrived to avoid the material was separated from the collet.	
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:



Parameter description: 4th Anti-Vibration Device open position in working mode. Setting method: In manual mode pusher will be pushed forward until 30~50mm before 4th anti vibration device. Then input the current position. Note: The Forth anti–vibration should be opened before the end of the push bar will be arrived to avoid the material was separated from the collet.	
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:



Parameter description: 5th Anti-Vibration Device open position in working mode. Setting method: In manual mode pusher should be pushed forward until 30~50mm before 5th anti vibration device. Then input the current position. Note: The Five anti–vibrations should be opened before the end of the push bar will be arrived to avoid the material was separated from the collet.	
2.7XL Generally value:	Setting range: 0~5000
3.7XL Generally value:	Setting value:

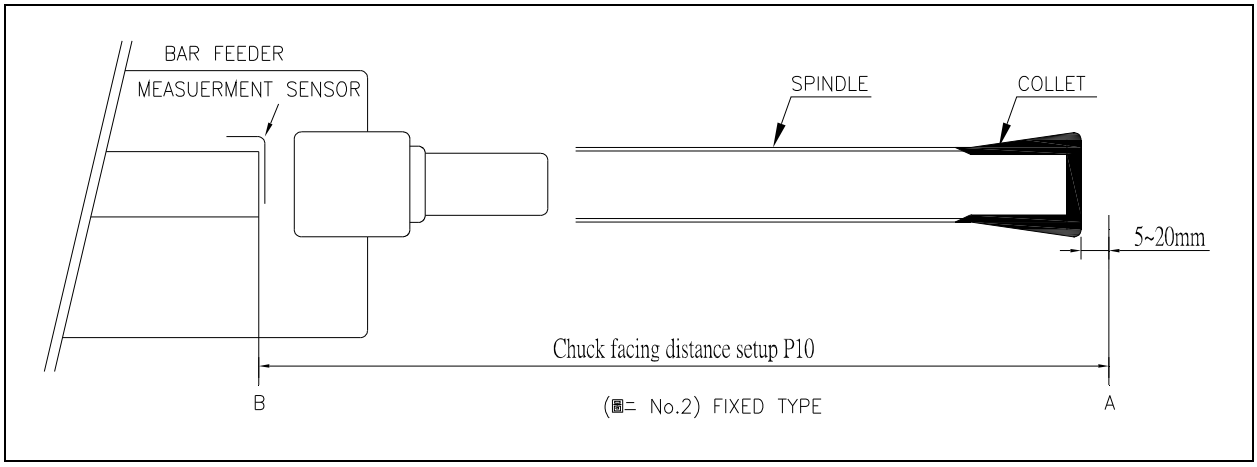


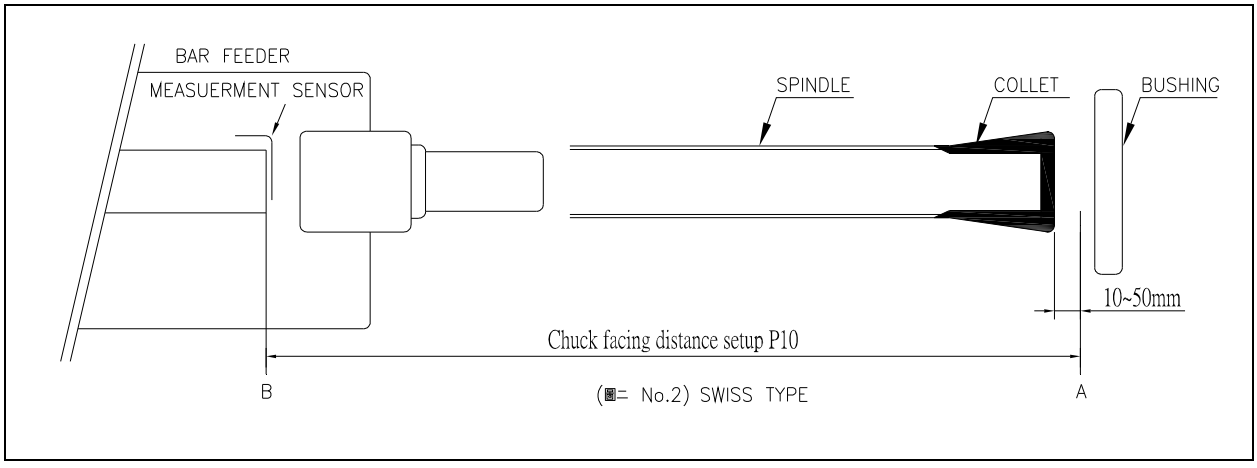
Parameter description: Chuck facing position is the distance between cutters facing detection to cutter facing position. We cannot know if the new bar material has been pushed to chuck facing position until loading a new bar material. (as picture 2)

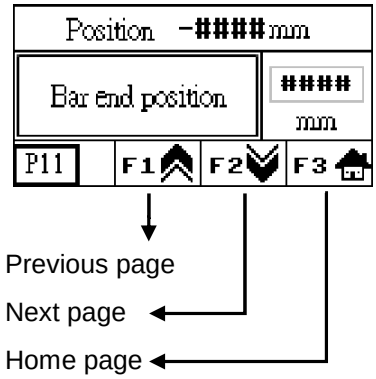
Setting method: According to below drawings to set the distance from A - B point. In addition input it by mm unit.

2.7XL Generally value:	Setting range: 0~4000
3.7XL Generally value:	Setting value:

(Figure 2)







Parameter description: This position is the maximum working limit. If pusher position value is bigger than bar end setting that bar feeder will offer a bar end signal to notice lathe to prepare loading new bar material

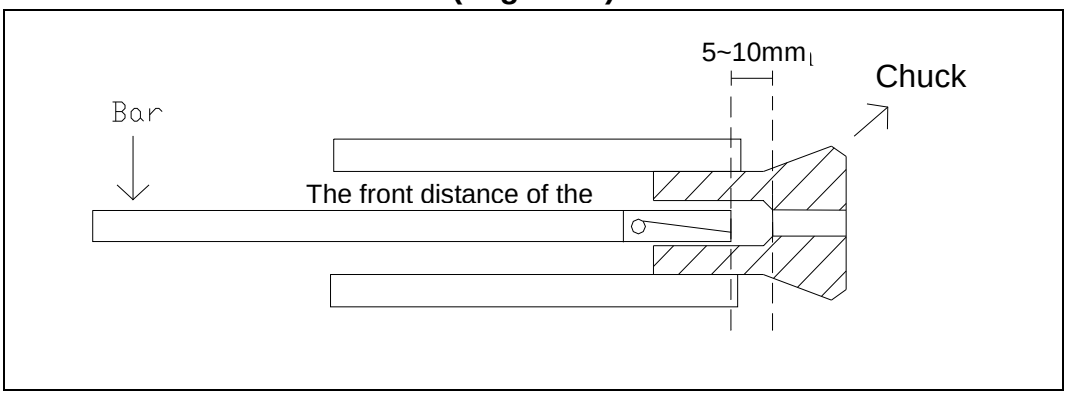
Setting Mode for fixed lathe: In the manual mode let pusher into lathe spindle until 5~10mm before lathe chuck. Then confirm the value of monitor to input it to be bar end position.

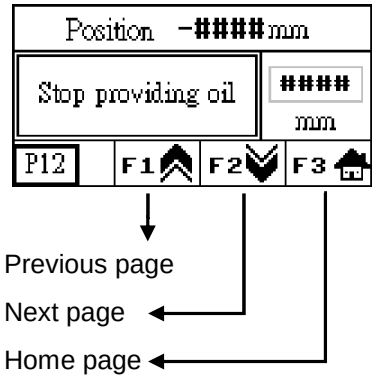
Setting Mode for sliding lathe: In the manual operation let lathe spindle move to +Z limit position and pusher move forward until 5~10mm before chuck. Then confirm the value of monitor to input it to be bar end position.

Note: Reference figure 3**:** Be sure to adjust distance indeed to avoid bar end longest or shortest.

2.7XL Generally value:	Setting range: 0~4000
3.7XL Generally value:	Setting value:

(Figure 3)



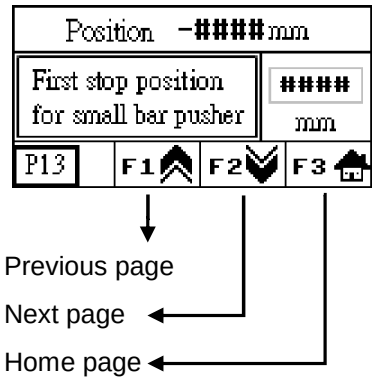


Parameter description: In auto mode the pump stops providing oil position.

Setting method: In manual mode let pusher move forward to stop providing oil position. Then input the current position.

Note: Oil pumps provide oil for lubrication and cooling.

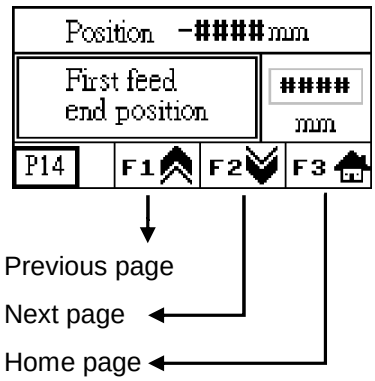
2.7XL Generally value:	Setting range: 0~4000
3.7XL Generally value:	Setting value:



Parameter description: This parameter is to prevent hard impact on new bar material end because of small pusher block high speed during loading a new bar material. This parameter will let the small pusher block to slow down to prevent hard impact to the new bar material.

Setting method: Input the required position.

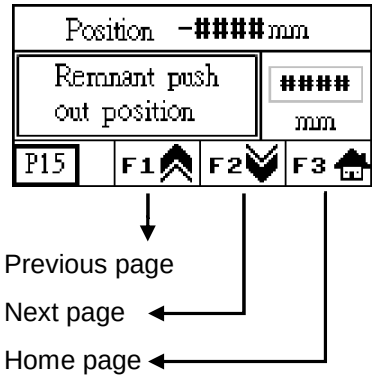
2.7XL Generally value:	Setting range: 0~4000
3.7XL Generally value:	Setting value:



Parameter description: The pre-feeding pusher will push the bar material forward until the bar material can go into collet smoothly when bar pusher is up.

Setting method: Push pre-feeding pusher to stop position and input current position.

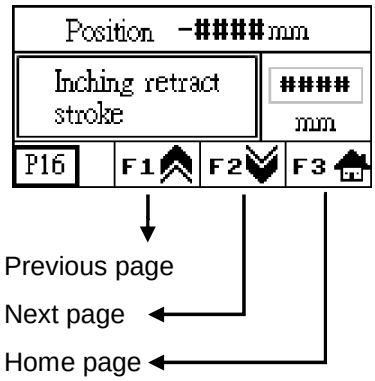
2.7XL Generally value:	Setting range: 0~2000
3.7XL Generally value:	Setting value:



Parameter description: This distance is the position that bar pusher pushes out the remnant into the lathe.

Setting method: Push the pusher to exceed chuck position 20mm by manual operation. Then confirm the value showing in monitor and input this value.

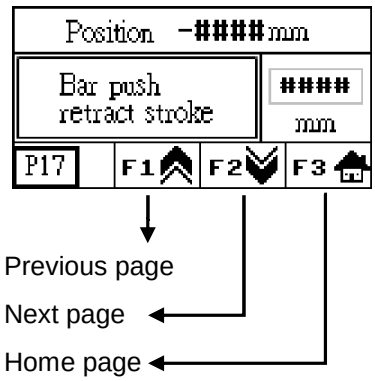
2.7XL Generally value:	Setting range: 0~4000
3.7XL Generally value:	Setting value:



Parameter description: Bar pusher will pull back and inching move forward when loading a new bar material. This parameter will control pusher retreating distance.

Setting method: Input the required retreat distance.

2.7XL Generally value:	Setting range: 0~300
3.7XL Generally value:	Setting value:

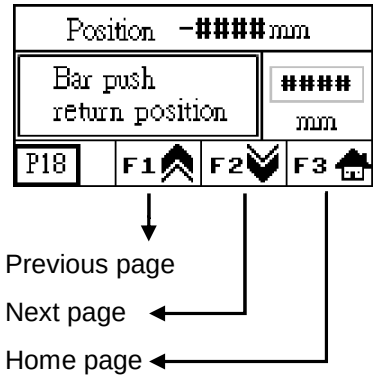


Parameter description: If bar pusher position is less than setting value that pusher will retreat to setting position when chuck close.

Setting method: Input the required pusher retreating distance.

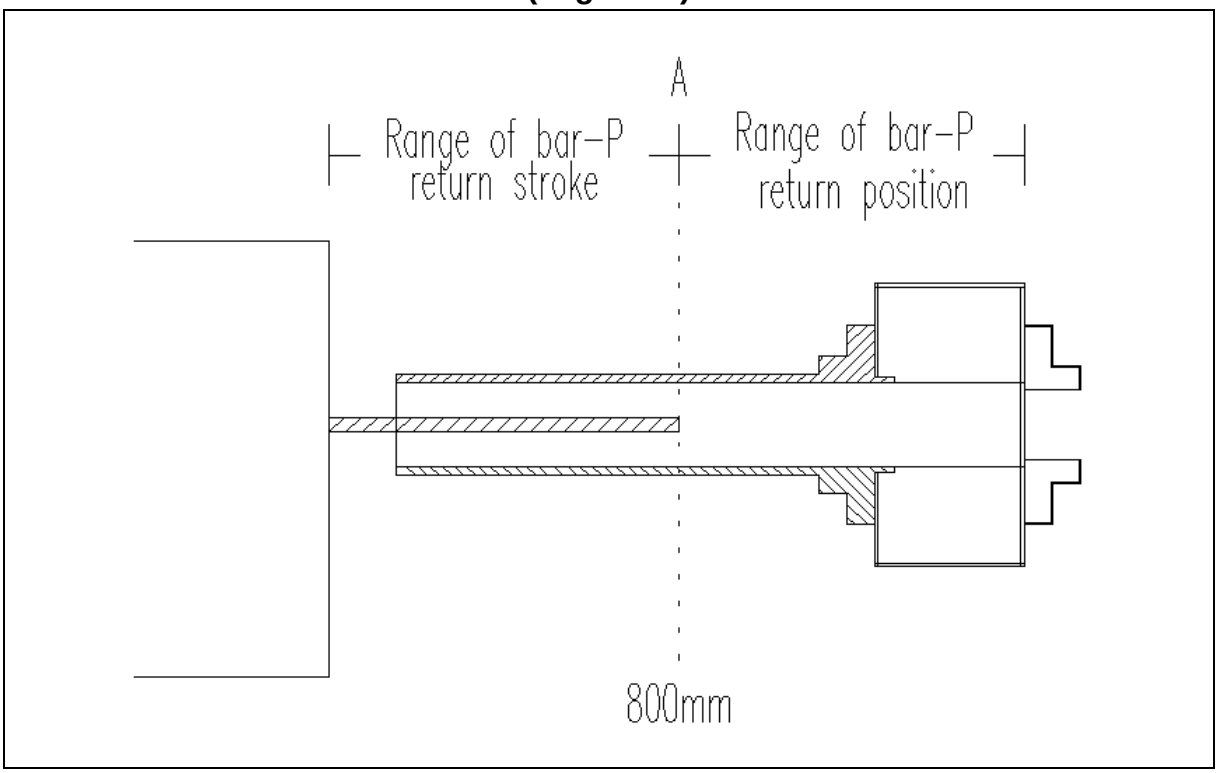
For example: Reference figure 4**:** If the value of parameter is set to 30mm and the bar pusher is within the A area, the bar pusher will retract to 30mm after chuck closed.

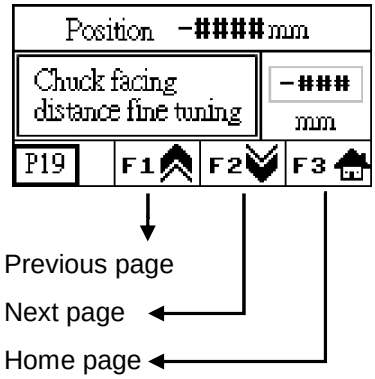
2.7XL Generally value:	Setting range: 0~300
3.7XL Generally value:	Setting value:



Parameter description:	If bar pusher position is over than setting value that pusher will retreat to setting position when chuck close. In order to prevent friction and vibration caused from pusher going into the lathe spindle too long.
Setting method:	By manual operation let the bar pusher move into the spindle inside around 1 / 3 of its length. To ensure not to touch the spindle and input the current position.
For example:	Reference figure 4**:** If the value of parameter is set to 800mm and the bar pusher is out of the A area, the bar pusher will retract to 800mm after chuck closed.
2.7XL Generally value:	Setting range: 0~3000
3.7XL Generally value:	Setting value:

(Figure 4)

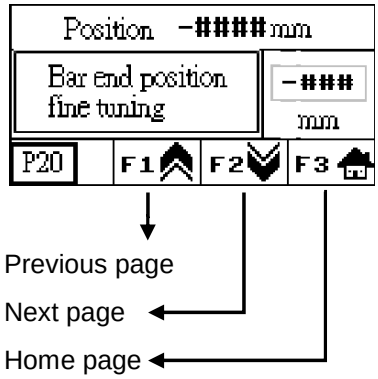




Parameter description: Fine tuning for bar end position based on chuck facing position. If the tuning value is bigger than 200mm that please amend cutter facing position directly.

Setting method: Input the required value.

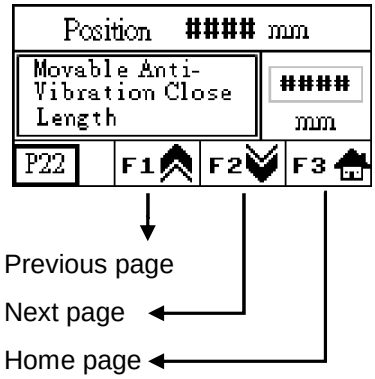
2.7XL Generally value:	Setting range: -200~200
3.7XL Generally value:	Setting value:



Parameter description: Fine tuning for bar end position based bar end position. If the tuning value is bigger than 200mm that lease amend bar end position directly.

Setting method: Input the required value.

2.7XL Generally value:	Setting range: -200~200
3.7XL Generally value:	Setting value:

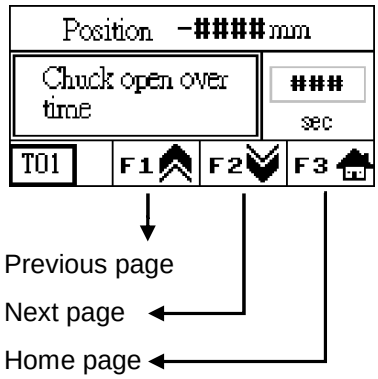


Parameter description: Under Auto-Mode, Anti-vibration Device will close when bar pusher reached this parameter setup position.

Setting method: Input the required length.

Note: To disable this parameter function, set the value to zero.

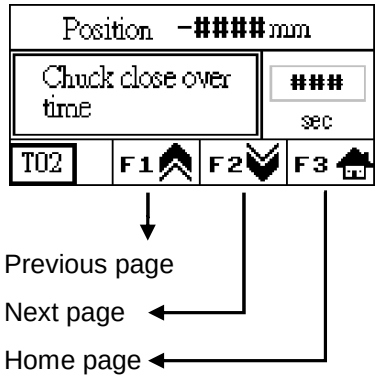
2.7XL Generally value:	Setting range: 0~2000
3.7XL Generally value:	Setting value:



Parameter description: The timing is over the time for chuck opened under automatic mode and ALARM 29 will display and stop operating.

Setting method: When the setting value is 0, the parameter function will be disabled.

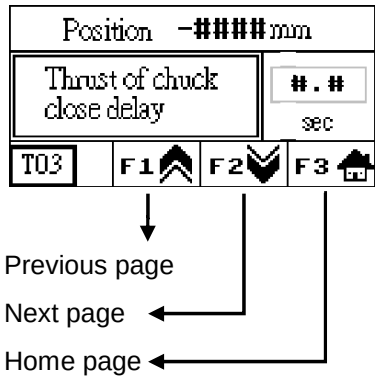
2.7XL Generally value:	Setting range: 0~999
3.7XL Generally value:	Setting value:



Parameter description: The timing of chuck closed is over time under automatic mode. The ALARM 32 will display and stop operating.

Setting method: When the setting value is 0, the parameter function will be disabled.

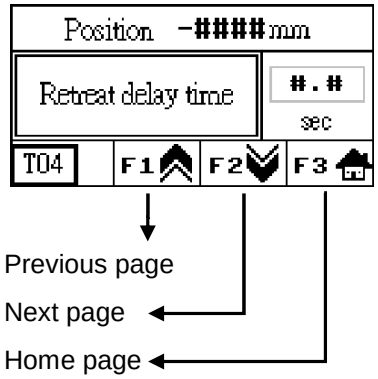
2.7XL Generally value:	Setting range: 0~999
3.7XL Generally value:	Setting value:



Parameter description: In automatic working mode, pusher pushes bar material into lathe and chuck close to work. To ensure that material will not move during the chuck close. Set the delay time for bar pusher to change the speed and torque.

Setting method: Input the required time.

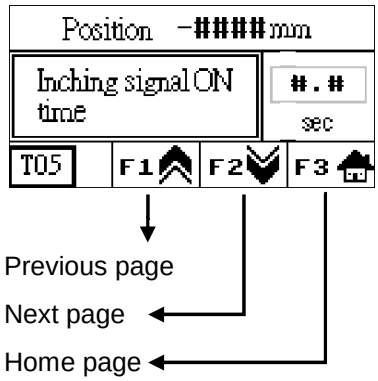
2.7XL Generally value:	Setting range: 0~9.9
3.7XL Generally value:	Setting value:



Parameter description: Sets delay time to stop the bar pusher drawing back so that the bar feeder can run the changing new bars process while the bar end signal and chuck open signal display from Lathe.

Setting method: Input the necessary delay time.

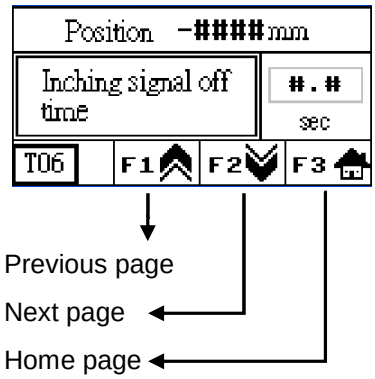
2.7XL Generally value:	Setting range: 0~9.9
3.7XL Generally value:	Setting value:



Parameter description: Set the starting time (ON) of bar pusher inching moves so that the chuck of lathe will move at the same time during bar feeder changes new bars.

Setting method: Input required time.

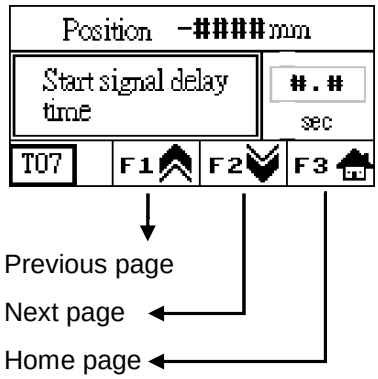
2.7XL Generally value:	Setting range: 0~9.9
3.7XL Generally value:	Setting value:



Parameter description: Set the ending time (OFF) of bar pusher inching moves so that the chuck of lathe will stop moving at the same time during bar feeder changes new bars.

Setting method: Input required time.

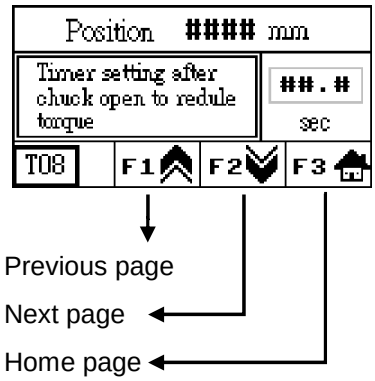
2.7XL Generally value:	Setting range: 0~9.9
3.7XL Generally value:	Setting value:



Parameter description: Delay the time for sending the signal of the new bar change finished after new bar pushed to chuck facing position.

Setting method: If the time sets too long, it may cause lathe standby time much longer during new bar changing.

2.7XL Generally value:	Setting range: 0~9.9
3.7XL Generally value:	Setting value:



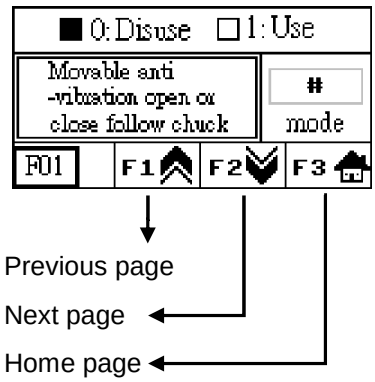
Parameter description: In automatic mode the pre-feeding pusher will push bar material when the pusher rising. Then anti vibration device will open when pusher pushes bar material to touch chuck facing sensor.

Setting method: Input the required length.

Note: To disable this parameter function, set the value to zero.

2.7XL Generally value:	Setting range: 0~9.9
3.7XL Generally value:	Setting value:

6.3.4.2 System function / enter password “258”

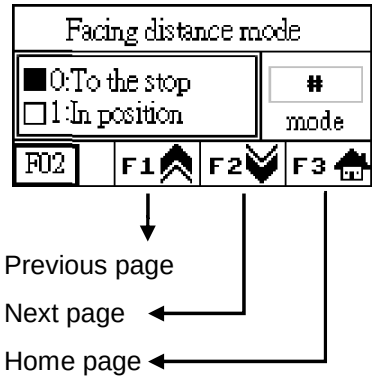


Parameter description: Switch either one function of opening or closing the moveable anti-vibration device to accompany the lathe chuck opened or closed.

0 - disable

1 - enable

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

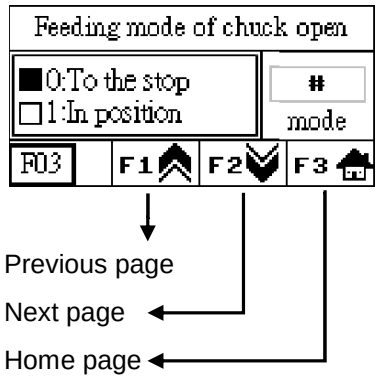


Parameter description: Select either one mode of bringing a new bar to facing position automatic or a new bar pushed to the setting facing position by bar pusher during bars changed.

“0: To the stop”: The new bar will be pushed to the chuck facing position and keep pushing until the lathe chuck closed.

“1: In position”: The new bar will be pushed to the setting chuck facing position by the parameter and the bar pusher will stop right away.

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

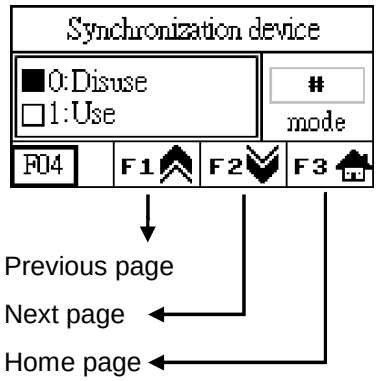


Parameter description: Set either one of modes of bar pusher keeps feeding or stops feeding a bar to the product finishing length position under automatic mode when chuck is open.

"0: To the stop": The bar pusher pushes the bar to the product finishing position and keeps pushing.

"1: In position": The bar pusher pushes the bar to the product finish length position and stop pushing.

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

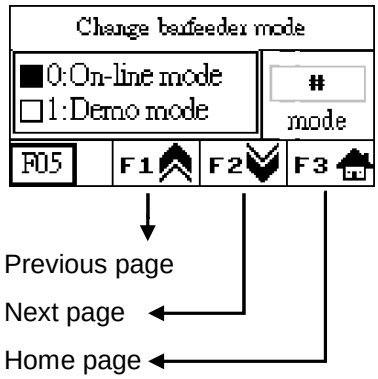


Parameter description: It sets the bar/headstock synchronizing device operation mode.

"0: Disuse": Bar-headstock synchronization is disabled; the bar is continuously driven by the feed motor. For matching with Fixed type CNC.

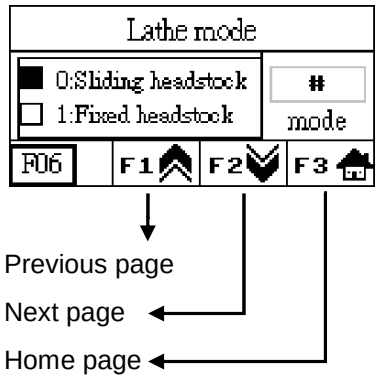
"1: Activated": Headstock synchronization is on when lathe collet are closed (feed motor stopped), and synchronization is off when lathe collet is open (feed motor running). For matching with Swiss type CNC.

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:



Parameter description: Set two modes to normally operate, if set the mode to"0:ON-line mode", bar feeder starts operating along with lathe. If need bar feeder to cycle automatically without connective, please set the mode for"1: Demo mode".

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

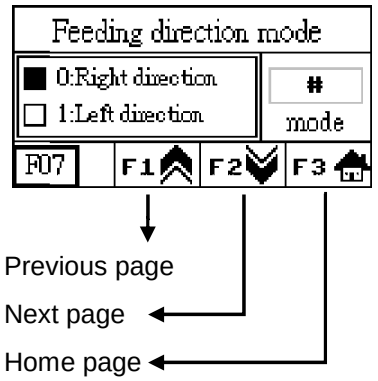


Parameter description: Set the mode for use what kind of type of lathe.

0: Sliding headstock type of lathe

1: Fixed headstock type of lathe

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

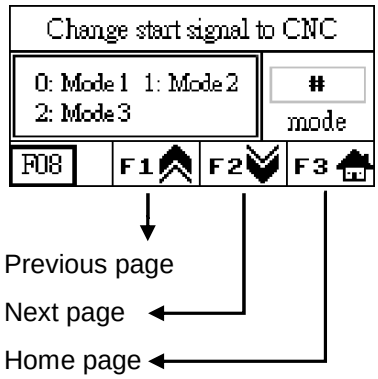


Parameter description: Set the direction of bar feeder fed along with type of lathe.

0: Left feed to right direction

1: Right feed to left direction

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:



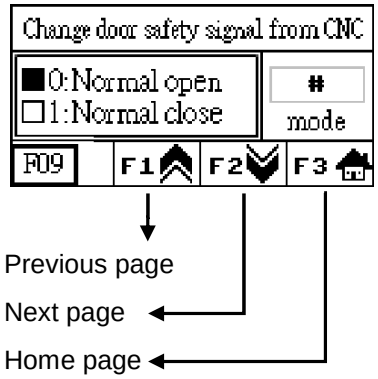
Parameter description: Select modes for output the Cycle start signal of bar feeder.

0: Under automatic mode, Cycle start signal will send to lathe after bar changed and after bar changed while lathe chuck is opened.

1: The cycle start signal will be sent after bar changed.

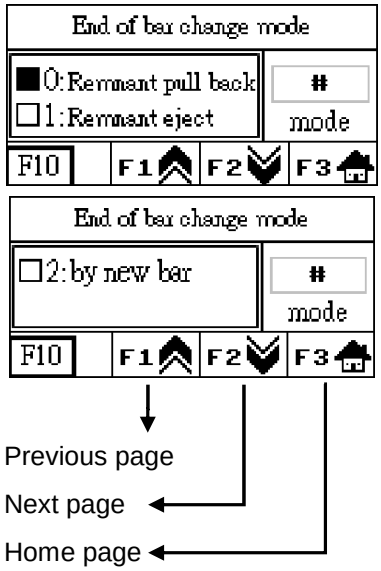
2: Disable.

2.7XL Generally value:	Setting range: 0~2
3.7XL Generally value:	Setting value:



Parameter description: Change the interface signal means safety door (X23) is abnormal. Change the contacts of NO or NC circuit of inner program.

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:



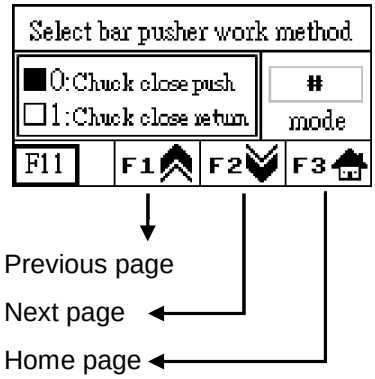
Parameter description: Selects different modes for dealing with remnant after bar changed.

0: Pull back the remnant into the bar feeder.

1: Push out the remnant into the lathe.

2: Push out the remnant into the lathe by a new bar when bar end signal is sent and bar feeder will change another new bar.

2.7XL Generally value:	Setting range: 0~2
3.7XL Generally value:	Setting value:



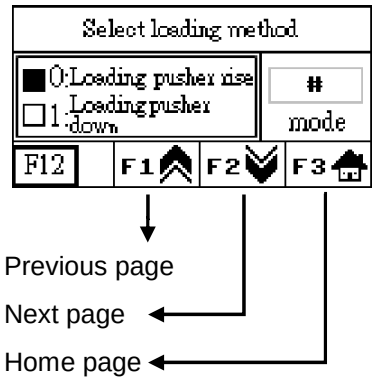
Parameter description: Select the bar pusher forward or backward under automatic mode.

0: The bar pusher forward when chuck closed. (Standard)

1: The bar pusher backward when chuck closed. (Special)

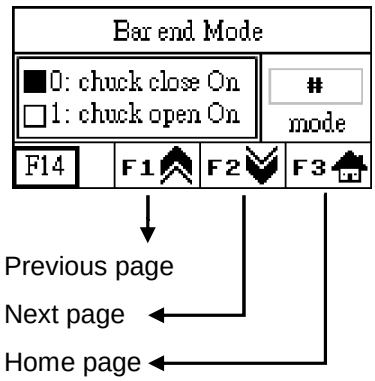
※ If select the parameter 1, must operate with parameter P17 (Bar pusher return stroke) and parameter P18 (Bar pusher return position).

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:



Parameter description: The parameter not available.

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

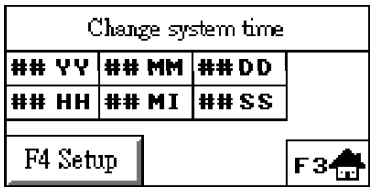


Parameter description: When bar end occurred, the timing for bar feeder sending bar end signal.

0: Chuck close On

1: Chuck open On

2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:



Home page

Parameter description: Set the date and time of system to record data.

2.7XL Generally value:	Setting range: NO
3.7XL Generally value:	Setting value:

Home page

Parameter description: Select the proper language of the information displayed:

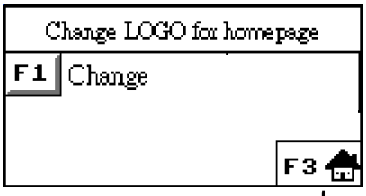
0:Traditional Chinese

1:English

2:Simplified Chinese

3:Spanish

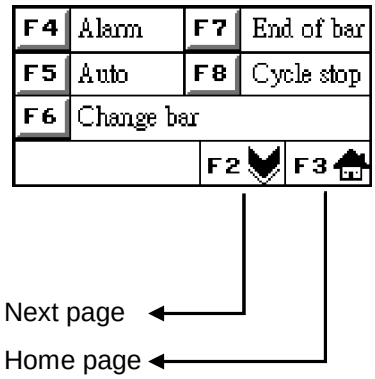
2.7XL Generally value:	Setting range: 0~3
3.7XL Generally value:	Setting value:



Home page

Parameter description: Shift to display LOGO homepage on the HMI screen.

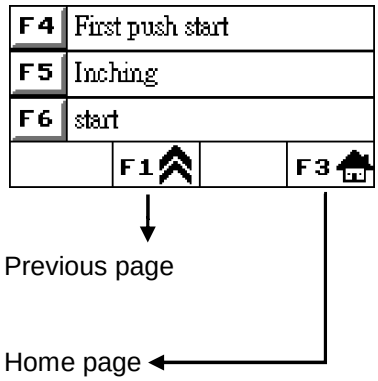
2.7XL Generally value:	Setting range: NO
3.7XL Generally value:	Setting value:



Parameter description: This parameter allows technician to test each signal if it output to lathe after settle down the bar feeder.

Setting method: This parameter only executive under manual mode both lathe and bar feeder, otherwise it may cause danger.

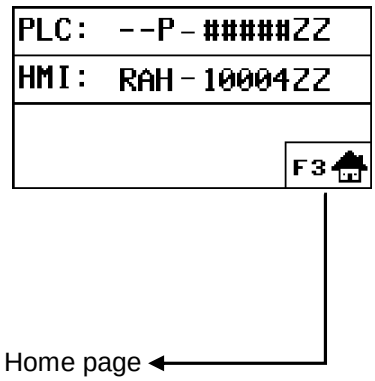
2.7XL Generally value:	Setting range: NO
3.7XL Generally value:	Setting value:



Parameter description: This parameter allow technician to test each signal output on interface is continued to lathe.

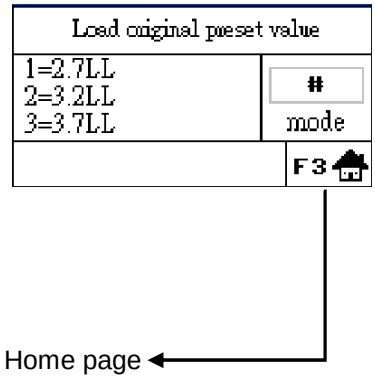
Setting method: To executive this parameter must be under manual mode both lathe and bar feeder or could cause danger.

2.7XL Generally value:	Setting range: NO
3.7XL Generally value:	Setting value:



Parameter description: To verify the version number of PLC and HMI programs.

2.7XL Generally value:	Setting range: NO
3.7XL Generally value:	Setting value:



Parameter description: Set all parameters to original value. Select firstly the correct length of bar feeder to operate. Otherwise may cause problems.

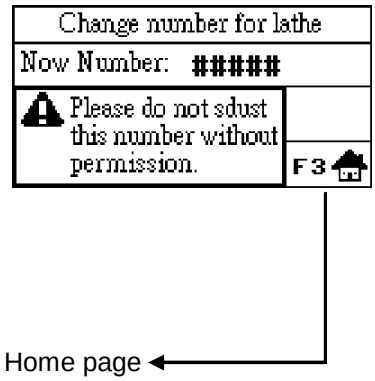
1: 2.7LL

2: 3.2LL

3: 3.7LL

Note: When setting this parameter 1-3, all HMI and timer will return to “0”, and then start operating.

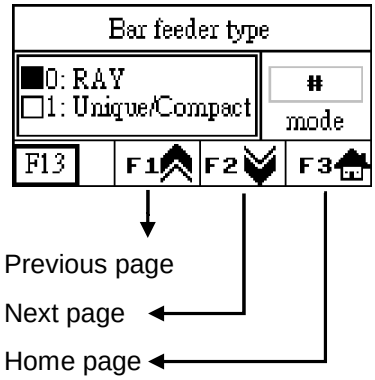
2.7XL Generally value:	Setting range: 0~3
3.7XL Generally value:	Setting value:



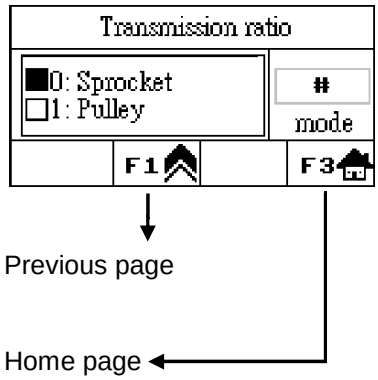
Parameter description: For recognizing the number of PLC and HMI programs to suit for lathe model.

2.7XL Generally value:	Setting range: 99999
3.7XL Generally value:	Setting value: 100

6.3.4.3 Special parameter chart



Parameter description: To set the model of loading parameter of bar feeder. 0: RANGER 112 1: Unique / Compact If normal loading mode is Ray type, then balls crew loading mode is Unique / Compact.	
2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:



Parameter Description: To set the model of transmission ratio of bar feeder. 0: Sprocket mode 1: Pulley mode Note: The parameter needs the practical transmission model to be set or it will affect the position calculated and display wrong data.	
2.7XL Generally value:	Setting range: 0~1
3.7XL Generally value:	Setting value:

7. MAINTENANCE

7.1 General maintenance 

HAZARD-WARNING

Before operators are maintaining the bar feeder, the power must be turned off.
In order to make good use of the bar feeder, please maintain the bar feeder regularly.
Accessories and the area of operation must be cleaned to increase the safety of operators.
Using petroleum or other dissolvent to maintain the bar feeder maybe caused damage of cover or plastic components.

INFORMATION

The oxidation will damage the components and electronic equipments. Please pull out the plug and the air joint while the bar feeder is not operated. Keep the air unobstructed in the operation area and the bar feeder can't be covered completely, otherwise there will be produced mist.

7.2 Regular maintenance

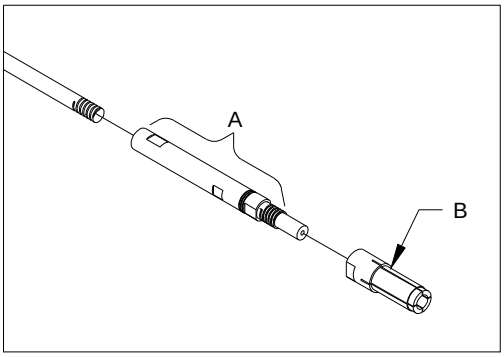
List 1. - Regular maintenance

Component	Action	Frequency				
		Hours			Regular	Period
		200	1250	2500	200	1250
Collet	Check wear	●				
Guide channel	Check wear and clean		●			
Feeding chain	Lubrication	●				
	Tension	●				
Air cleaner	Check				●	

(●) Optional

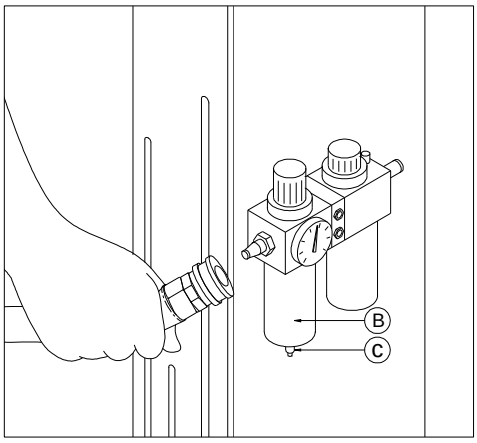
7.2.1 Check the pusher collet and revolving tip

Check that revolving tip (A) rotates smoothly.
Check that pusher collet (B) has the correct tension.



7.2.2 Check the air regulator

Check the bottle (B) for water.
Press button (C) to exhaust water out of bottle.



8. CAUSE AND BREAKDOWN AND TROUBLESHOOTING

8.1 Frequent cause of breakdown

ITEM	Cause	Solution
Unable to start the bar Feeder.	Without power.	Check the power source.
	In emergency.	Restart.
The bar feeder is reset but the bar feeder can’t auto to start.	The lathe is sending signal.	Check the connection.
The device of the compressed air can’t work.	Compressed air is unable to be sent.	Check the air supply.

8.2 Breakdown on frame device

Situation	Cause	Solution
Material are unable to load on the frame device.	The position of plates are too low.	Adjust the position of plates.

8.3 Breakdown on the collect

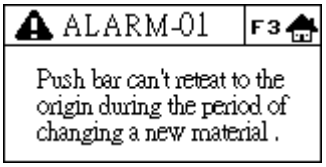
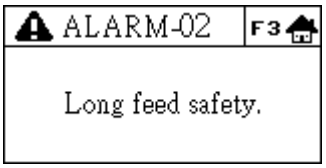
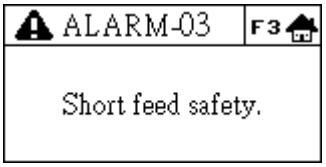
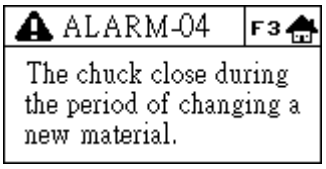
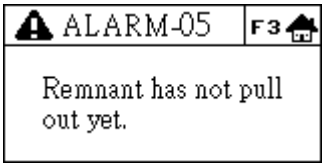
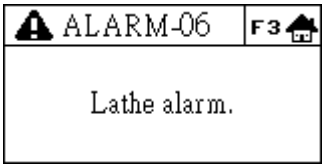
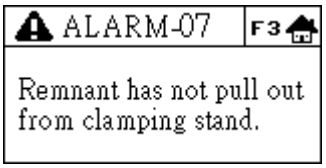
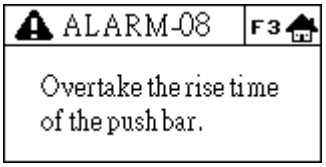
Situation	Cause	Solution
Material is unable to be inserted into the collet	The adjustment of the clamp device is not correct.	Re-adjust.
	The diameter of collet and material are different.	Change a new collet.
	The end of the material is too rough.	Chamfering before feeding material.
	The air pressure is without chamfer.	Check the pressure.

8.4 Breakdown on feeding material

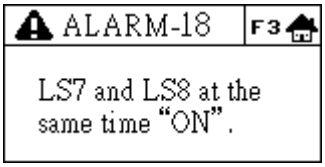
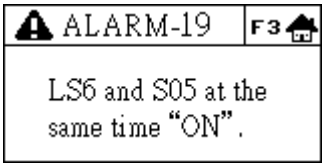
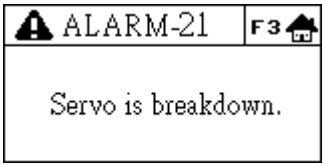
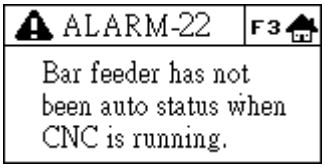
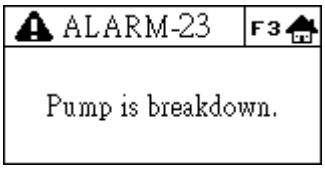
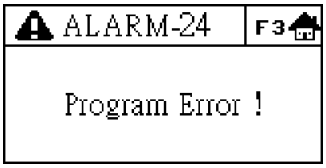
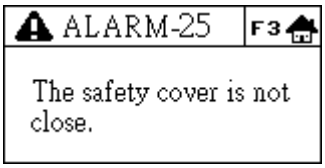
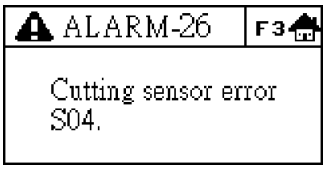
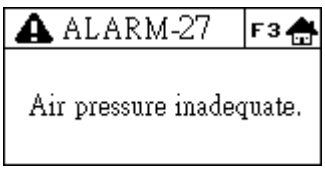
Situation	Cause	Solution
Material can't feed into the spindle smoothly	The center of the bar feeder and the lathe isn't correct	Re-adjust the center
Material can't feed into the chuck of the lathe smoothly	The front of the material is too rough.	Chamfering before feeding material

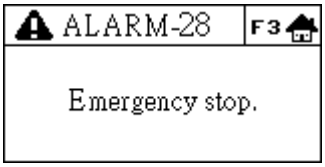
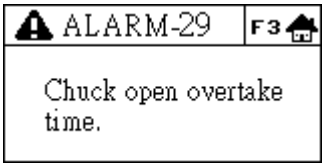
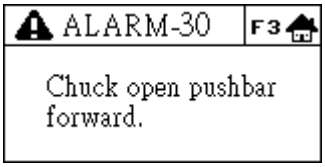
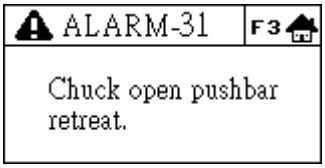
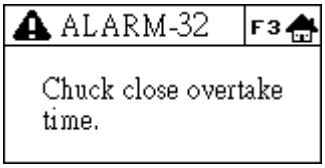
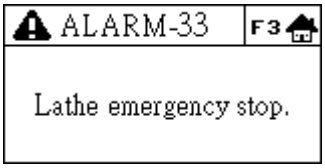
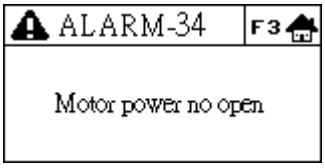
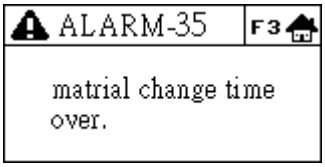
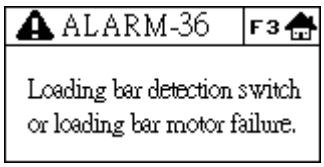
8.5 Refer alarm message

8.5.1 HMI Alarm Message

ERROR / CAUSE	CURE
	※Remove unidentified object.
	※Please check the value of long feed safety is correct. ※Check the turret whether it is at correct position of stopping material.
	※Please check whether the setting value of shortest length would be proper. ※Check the turret whether it is at correct position of stopping material.
	※When the bar feeder change new bar and **CNC** machining automatically, the chuck must keep in open state.
	※Check material whether get stuck in the spindle or in the pipe.
	※Check chuck why the chuck not close. By auto mode. ※Before machining, please solve the alarm of **CNC**.
	※Check remnant whether get stuck in the collet or clamping stand. ※Remnant don’t take out from finger.
	※Check air pressure. ※Check **LS08** whether breakdown or loose.

ERROR / CAUSE	CURE
ALARM-09 F3 Overtake the down time of the push bar.	※Check air pressure. ※Check **LS07** whether breakdown or loose.
ALARM-10 F3 Facing detection is breakdown (S04).	※Check whether **S04** was blocked by any unidentified objects.
ALARM-11 F3 Overtake the safety time of first feeding.	※Check the setting value of **S04** or **Q04**. ※Check whether to have the foreign matter to catch.
ALARM-12 F3 Without material.	※Check bars whether left in the plate. ※Check material whether rush out the clamping stand when first feeding. ※Check any bar inside guide channel or no
ALARM-13 F3 Overtake the time of clamp retreat.	※Check air pressure. ※Check **LS06** whether breakdown or loose.
ALARM-14 F3 Overtake the time of clamp go forward.	※Check air pressure. ※Check **LS05** whether breakdown or loose.
ALARM-15 F3 Material is too short.	※Change proper length of material. ※Check the setting value of **P11**.
ALARM-16 F3 Material is unable into the lathe smoothly.	※Check the setting value of **P10**.
ALARM-17 F3 When the bar feeder send start signal, the lathe isn't running.	※Check the alarm No. on **LCD** display of servo whether it is abnormal. If yes, please inform the relevant technician about abnormal code to analyze reasons.

ERROR / CAUSE	CURE
	※Check **LS07** and **LS08** whether breakdown or loose.
	※Check **LS05** and **LS06** whether breakdown or loose.
	※Check the alarm No. on **LCD** display of servo whether it is abnormal. If yes, please inform the relevant technician about abnormal code to analyze reasons.
	※Check the bar feeder was in auto status when **CNC** is machining normally, otherwise bar feeder can't feed material.
	※Check the power **0.L1** whether was cut off. Please refer to page.
	※Contact technician for solve.
	※Close door safety.
	※Check any foreign body jamming on detect sensor.
	※Check air pressure is enough or not

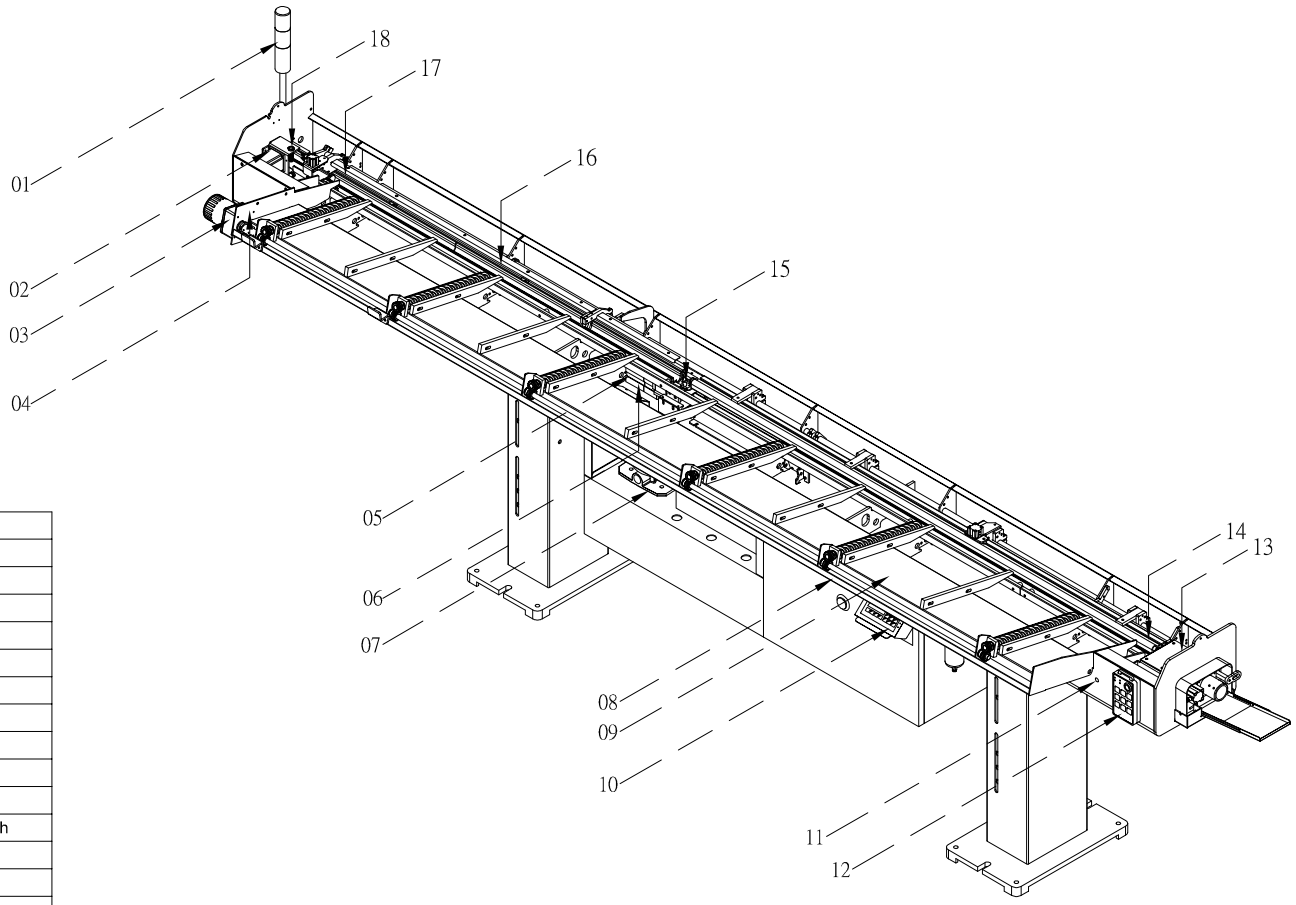
ERROR / CAUSE	CURE
	※lease release the button of emergency stop.
	※Check chuck why the chuck not close. By auto mode.
	※Chuck open pushbar forward.
	※Chuck open pushbar retreat.
	※Chuck close overtake time.
	※Pease loose Emergency stop button.
	※Lease release the button of poweron **(SS2).**
	※Surpasses the bar change time.
	※Please check if the sensor is short or not when screw bar is running. ※Please check if loading moter is running or not.

8.5.2 Servo alarm message

LIST OF SERVO DRIVER ALARM		
	Display	**Name**
ALARMS	AL. 10	Under voltage
	AL. 12	Memory error 1 (RAM)
	AL. 13	Clock error
	AL. 15	Memory error 2 (EEP-TOM0)
	AL. 16	Encoder error 1
	AL. 17	Board error 2
	AL. 19	Memory error 3 (Flash-ROM)
	AL. 1A	Abnormal motor assembly
	AL. 20	Encoder error 2
	AL. 24	Abnormal main circuit
	AL. 25	Absolute position erase
	AL. 30	Regenerative error
	AL. 31	Overspeed
	AL. 32	Overcurrent
	AL. 33	Overvoltage
	AL. 35	Command pulse frequency alarm
	AL. 37	Parameter error
	AL. 45	Main circuit high heat
	AL. 46	Servo motor overheat
	AL. 47	Abnormal cooling fon
	AL. 50	Overload 1
	AL. 51	Overload 2
	AL. 52	Error excessive
	AL. 8A	Overtime
	AL. 8E	error
	88888	Watch dog

	Display	Name
WARNINGS	AL. 92	Open battery cable warning
	AL. 96	Zero setting error
	AL. 99	Limit alarm
	AL. 9F	Battery warning
	AL. E0	Excessive regenerative load warning
	AL. E1	Overload warning
	AL. E3	Absolute position counter warning
	AL. E5	ABS time-out warning
	AL. E6	Servo emergency stop
	AL. E8	Cooling FAN low rpm alarm
	AL. E9	Main circuit off warning
	AL. EA	ABS SV ON warning
	AL. EC	Over load alarm 2
	AL. ED	Torqut word over

A4



No.	Part No.	Code	Function
01	J630110	HL1	Alarm & Auto Lamp
02	J2210021	M1	Servo Motor
03	607230600	M5	Loading Motor
04	J310407+J631600	LS10	Screw Cycle Check Switch
05	A12140501	LS06	Finger Extraction Switch
06	A12140501	LS05	Finger Introduction Into
07	P76202000	M4	Oil Pump
08	J310705	SS2	Power On
09	J3107041	ES1	Emergency Stop
10	J210502	HMI	Human Machine Interface
11	J310808 + J310804	SS3	Screw Foward/Reverse Switch
12	JVRA0B200	HP	Handheld Pendant
13	P43201000	CL1	Synchronization
14	J310338	S04	Measurement Sensor
15	J310403	LS09	Grippers Close Switch
16	A12140501	LS08	Channel Open Switch
17	A12140501	LS07	Channel Close Switch
18	J310339	S05	Zero Home Sensor

BAR FEEDER TYPE: RANGER 112

LATHE NAME:

LATHE TYPE:

EDGE TECHNOLOGIES
A DIVISION OF HYDROMAT INC

FIRST DATE	REVISION DATE	MAIN VOLTAGE	SIGNAL VOLTAGE	PAGE
2018/02/02	2018/03/27	220 VAC 3-PHASE	24VDC	P. 01

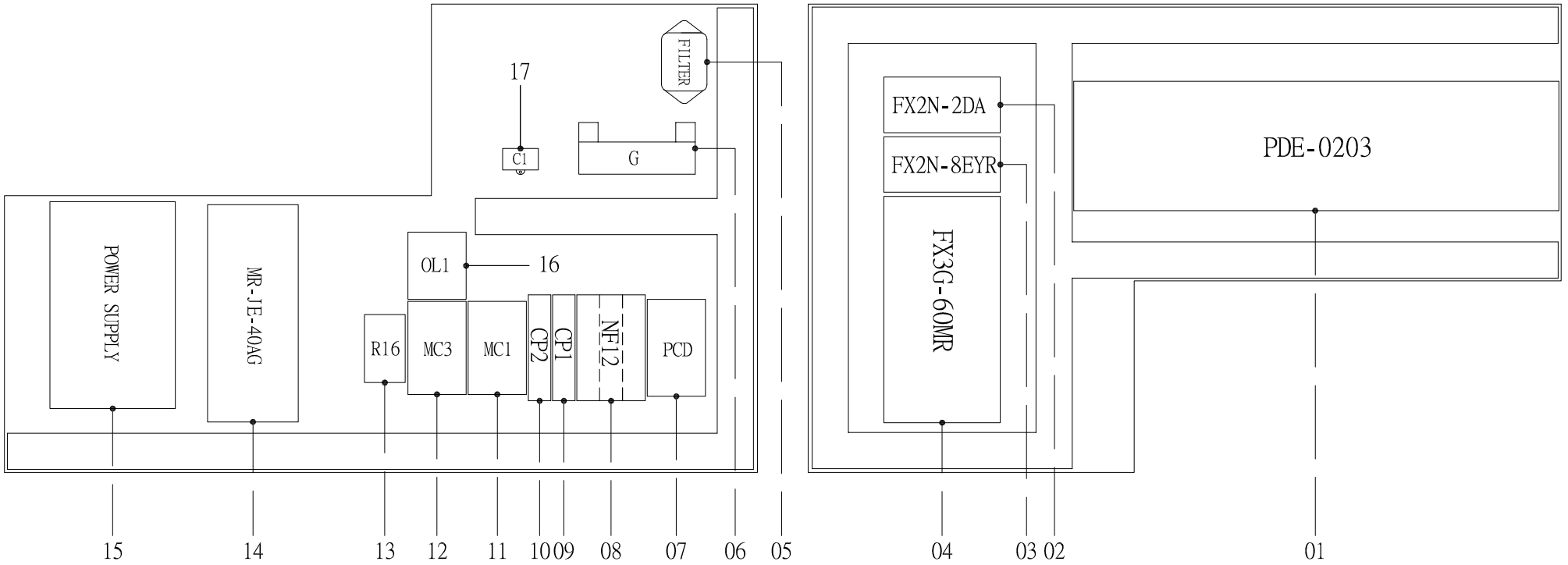
DRAWN BY: Seven

CHECKED BY:

DESCRIPTION: Machine electricity position

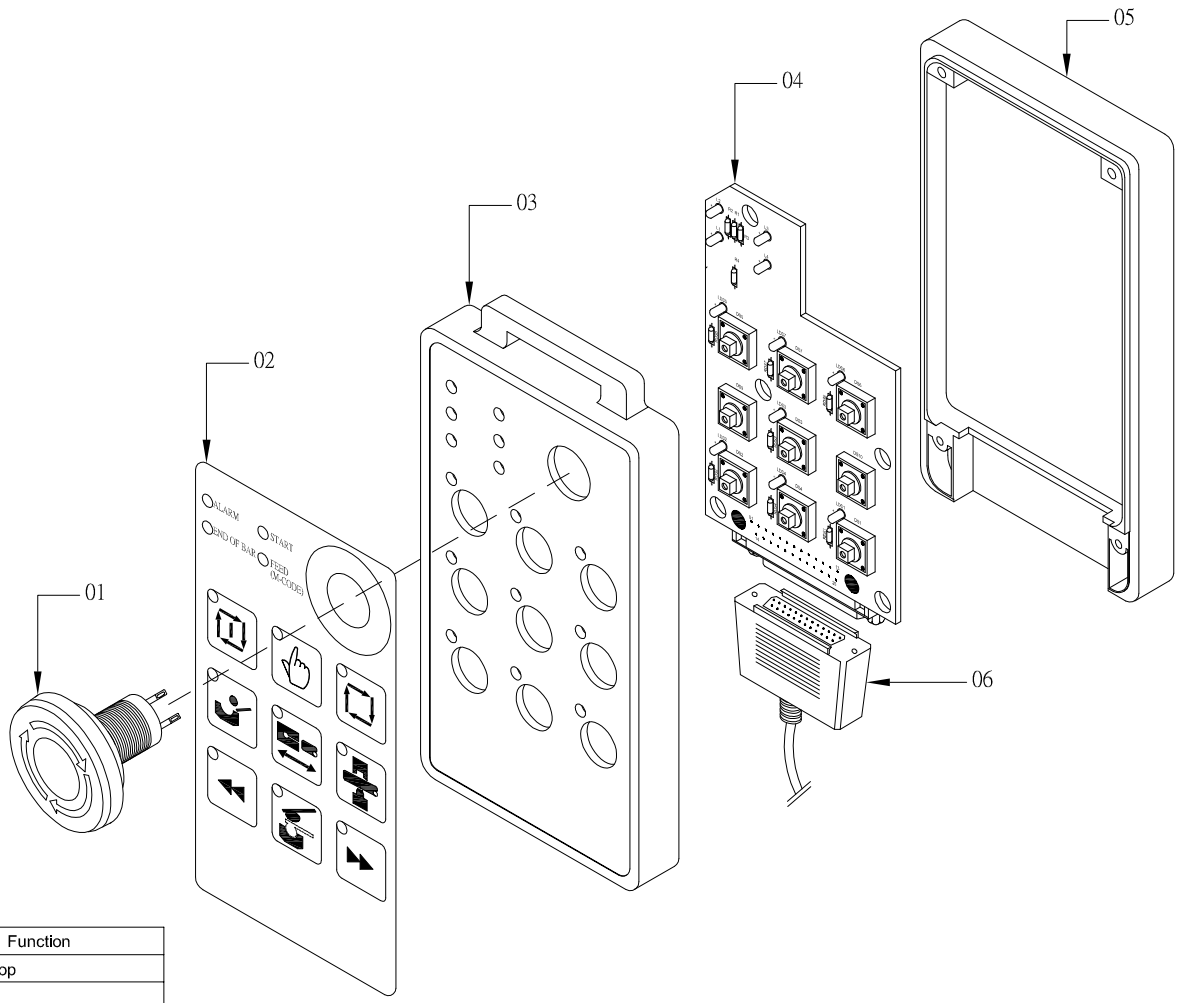
DRAWING NO.: JV-EDGE UNI2(MIX)-EG

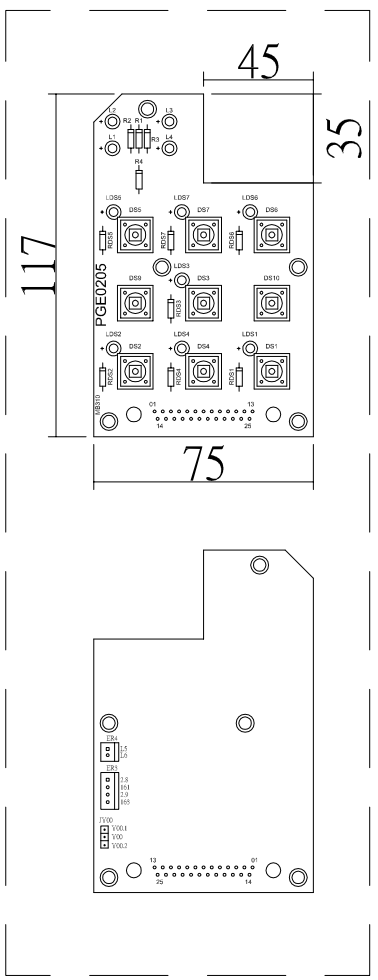
VERSION: C0



No.	Part No.	Code	Function	No.	Part No.	Code	Function
01	J511900	MPCB	Main PC Relay Board	13	J310206	R16	Relay Socket
02	J220200	2DA	Analogy Signal Module		J310203		Relay
03	J220102	8EYR	FX2N-8EYR	14	J221021	SV	Servo Motor Driver
04	J221009	PLC	Programmable Logic Controller	15	J230101	PS	Power Supply
05	J220405	FIL	Filter	16	J313350	OL1	Over Relay
06	J631202	FG	Facilities Ground	17		C1	Capacitance
07	J224106	PCD	Pulse Change Device				
08	J310524	NFB1	No Fuse Breaker				
09	J310525	CP1	Circuit Protection				
10	J310525	CP2	Circuit Protection				
11	J312709 + J312710	MC1	Magnetic Contactor				
12	J312709	MC3	Magnetic Contactor				

BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC / PAGE: P. 02
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: Distribution of Electric parts	
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG	VERSION: C0





No.	Part No.	Code	Function
01	J310702	ES2	Emergency Stop
02	P33200410		Paster
03	G91120500		Top
04	J511710	MPCB	PCB
05	G91120600		Bottom
06	J420600		Cable

BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 03
LATHE NAME	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY	DESCRIPTION: Decomposition of Remote control pendant		
LATHE TYPE				DRAWING NO.: JV-EDGE UNI2(MIX)-EG	VERSION: C0	

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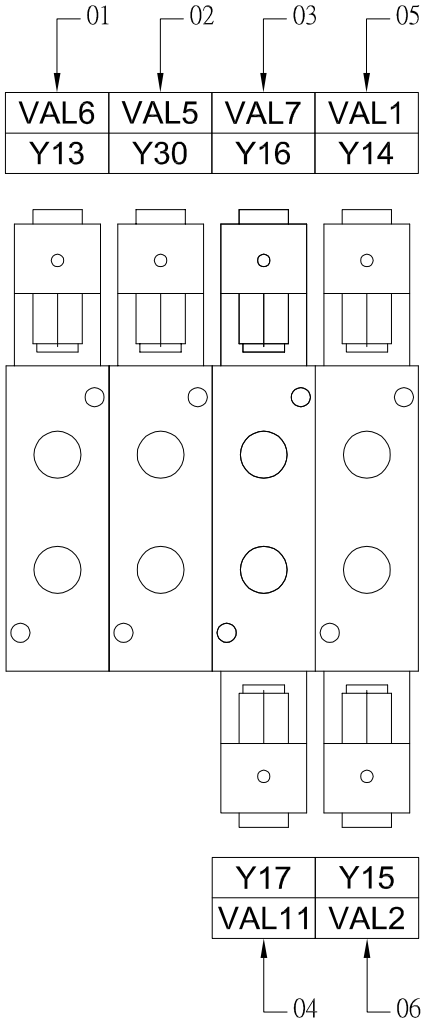
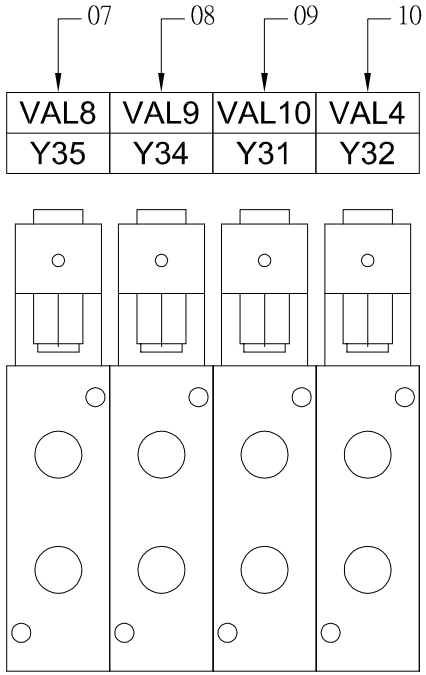
SOLENOID VALVE DIAGRAM 1

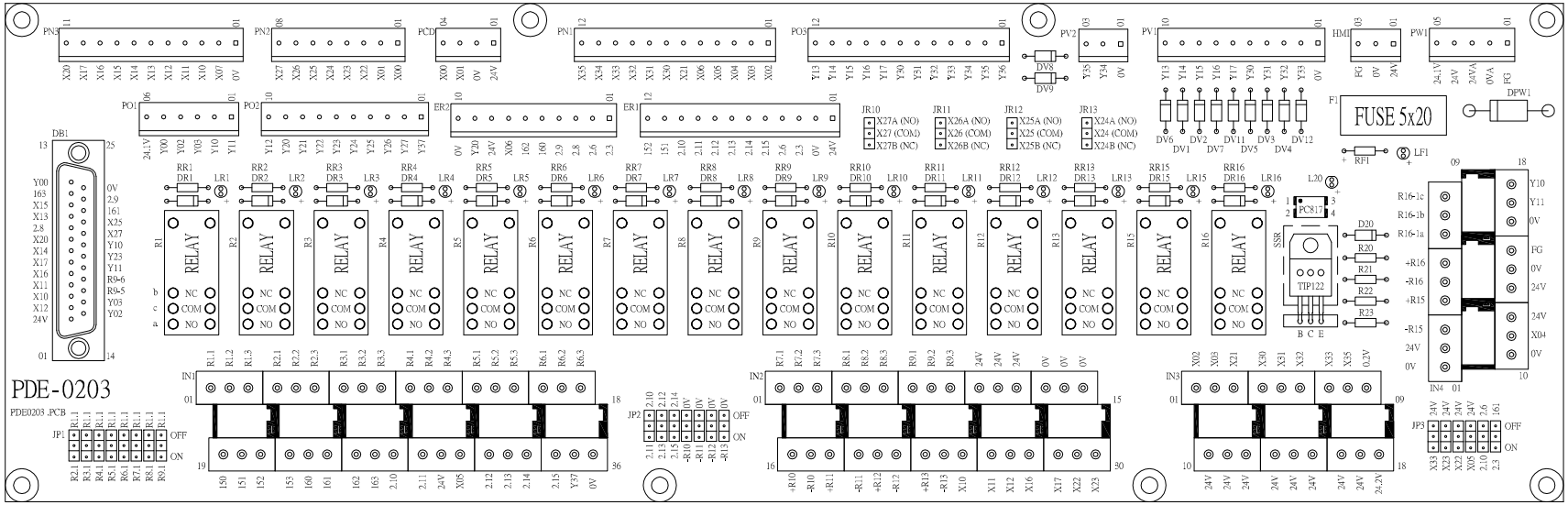


SOLENOID VALVE DIAGRAM 2



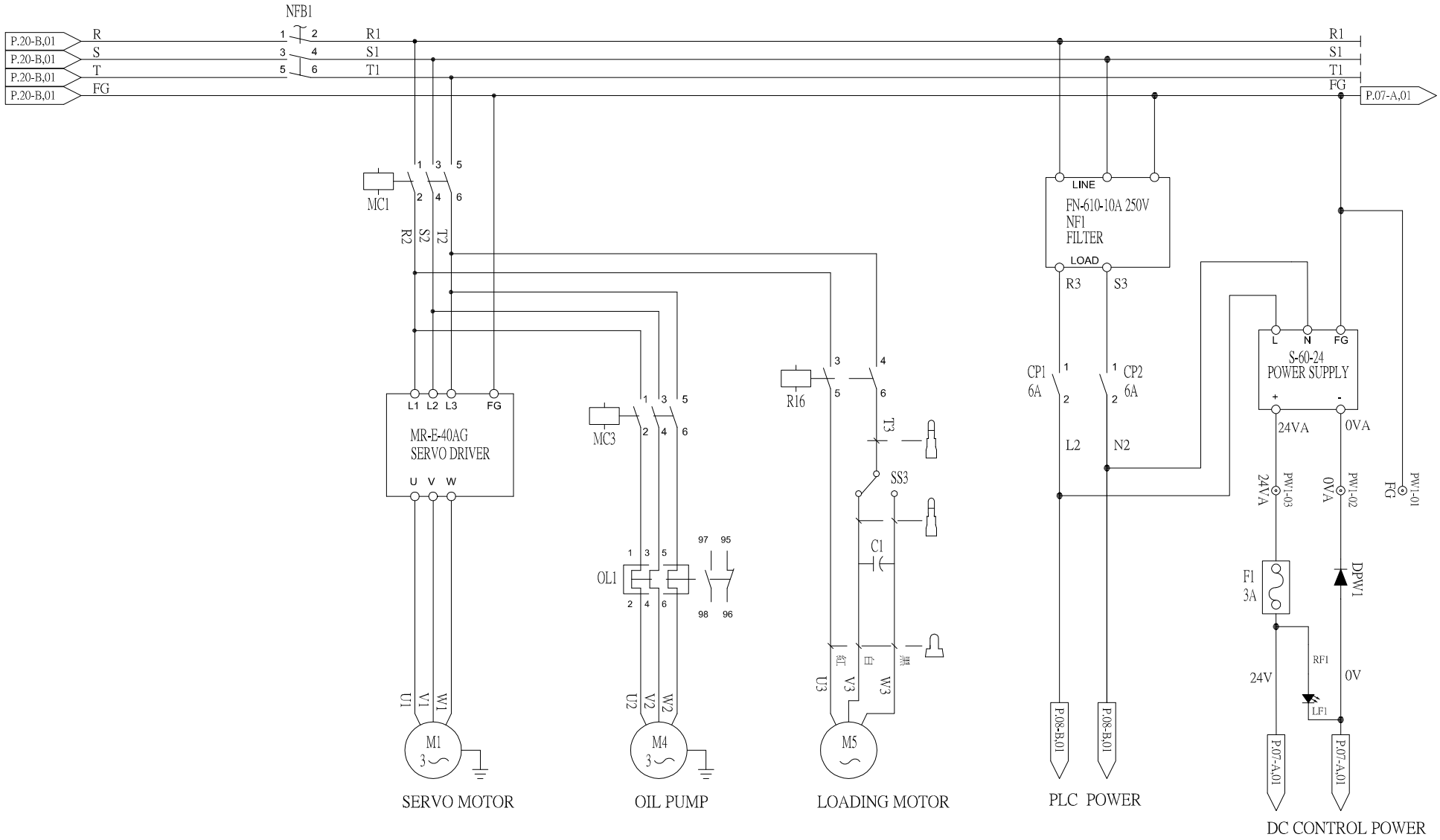
No.	Part No.	Code	Function
01	A12120100	VAL6	Cutting Device
02	A12120100	VAL5	Grippers
03	A12120200	VAL7	Introduction
04		VAL11	Extraction
05	A12120200	VAL1	Channel Open
06		VAL2	Channel Close
07	A12120100	VAL8	Movemable Anti-Vibration Device
08	A12120100	VAL9	1st Anti-Vibration Device
09	A12120100	VAL10	Guide Channel 2nd Closed
10	A12120100	VAL4	Guide Channel 3rd Closed

BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC / PAGE: P. 04
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: Solenoid valves position	
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG / VERSION: C0	

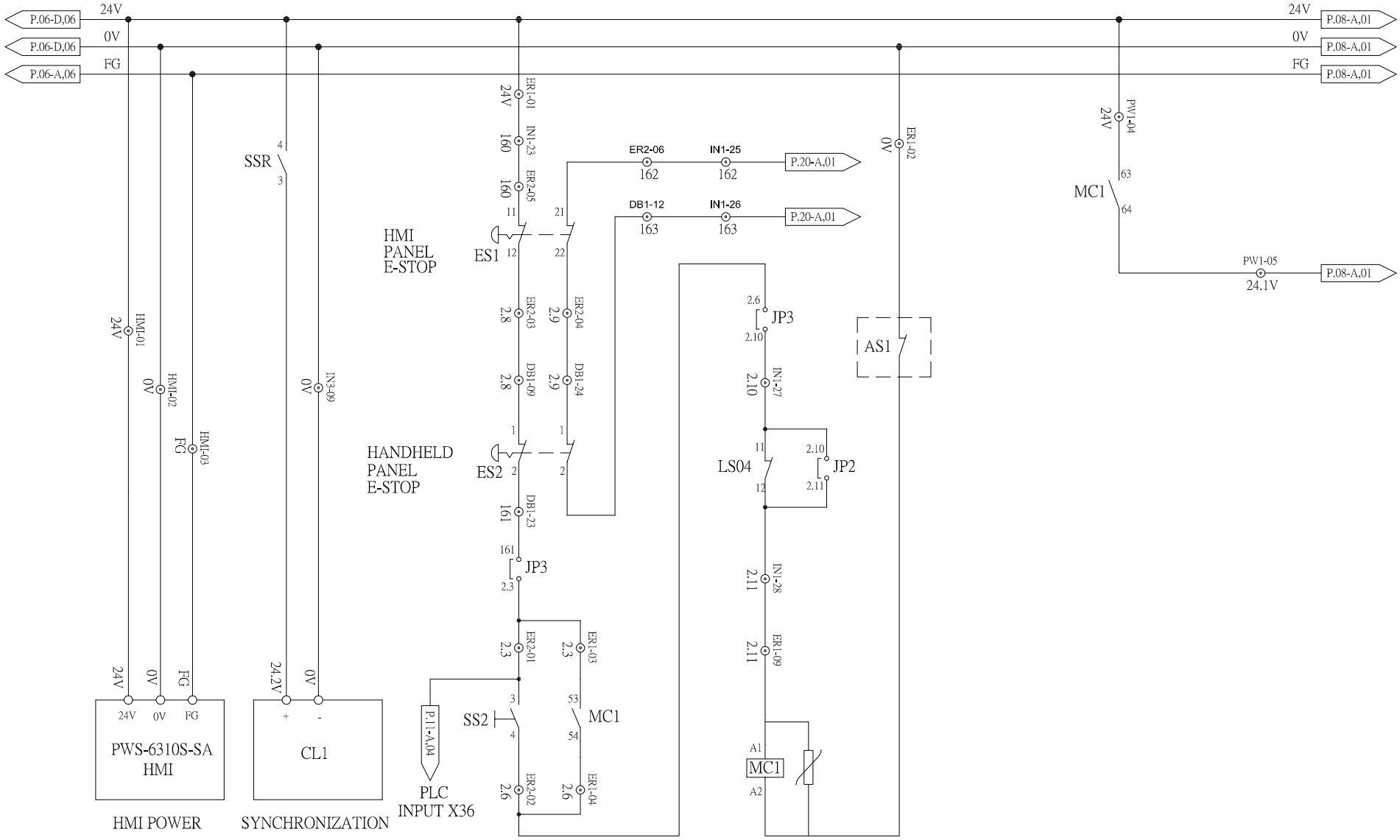


No.	Part No.	Code	Function
01	J310215	RR1~RR16	Relay
02	J620106	F1	Power fuse

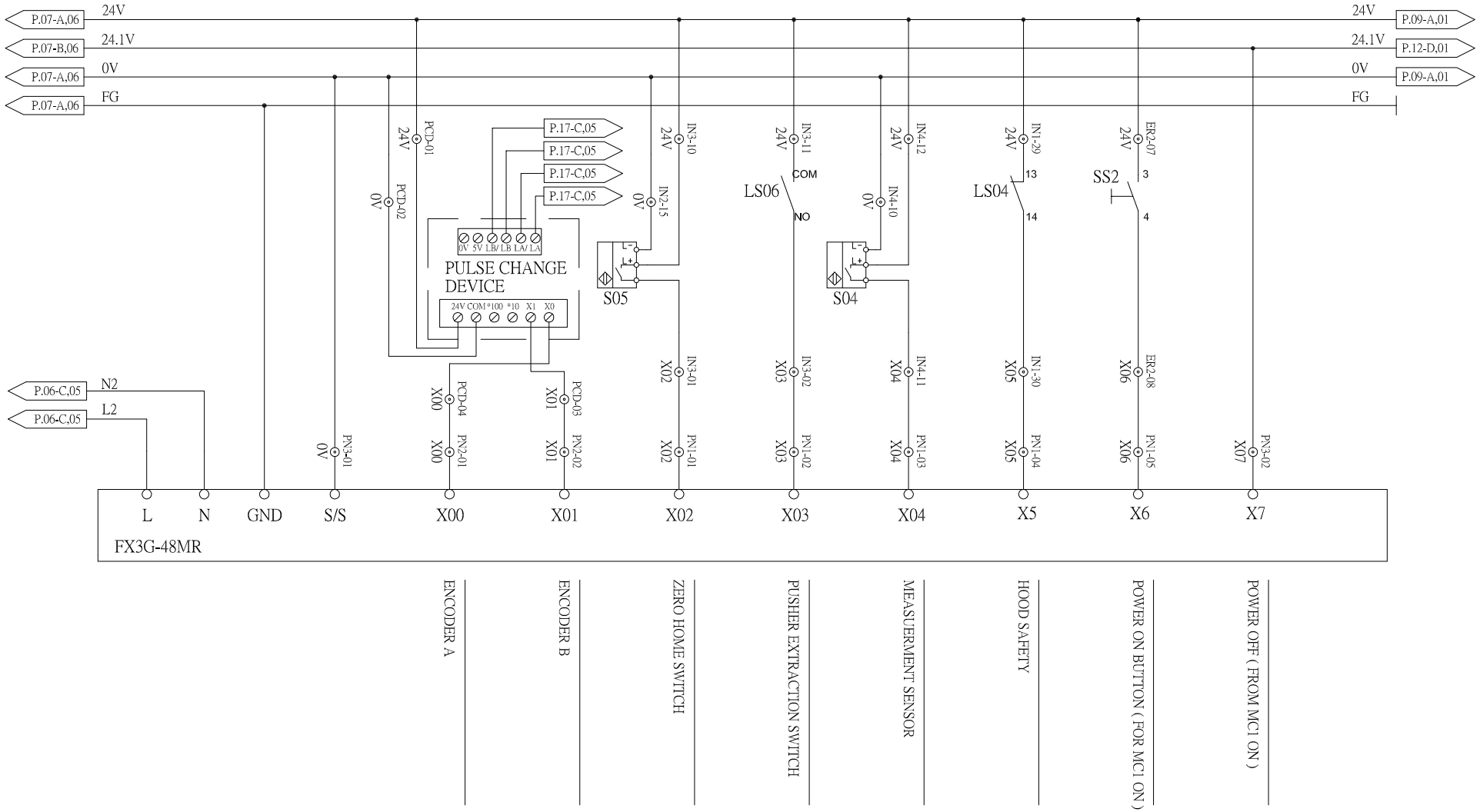
BAR FEEDER TYPE: RANGER 112	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC / PAGE: P. 05
LATHE NAME			DRAWN BY: Seven	CHECKED BY	DESCRIPTION: Main PC board	
LATHE TYPE					DRAWING NO.: JV-EDGE UNI2(MIX)-EG	VERSION: C0



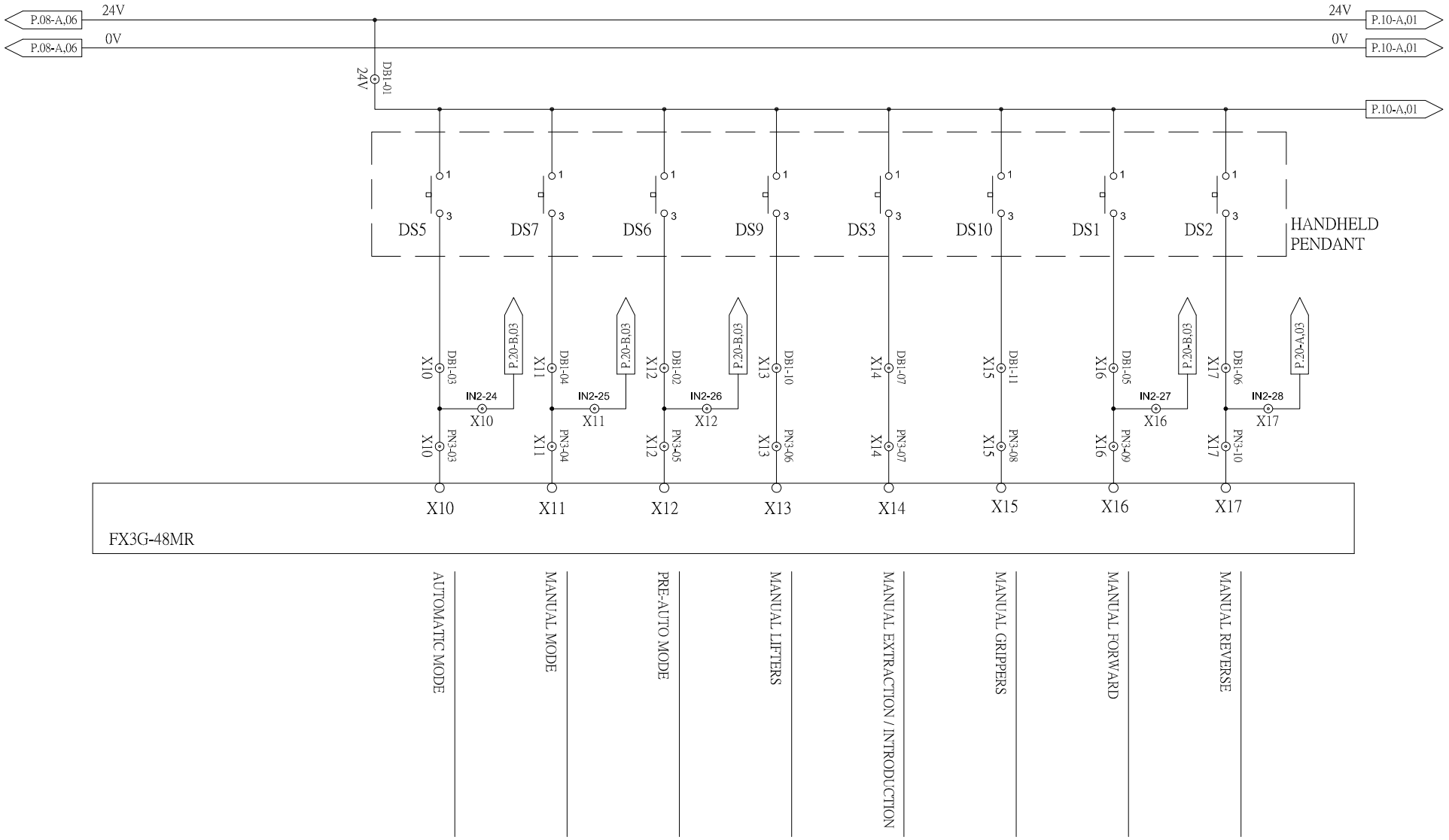
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 06
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: Main circuit 1		
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG	VERSION: C0	



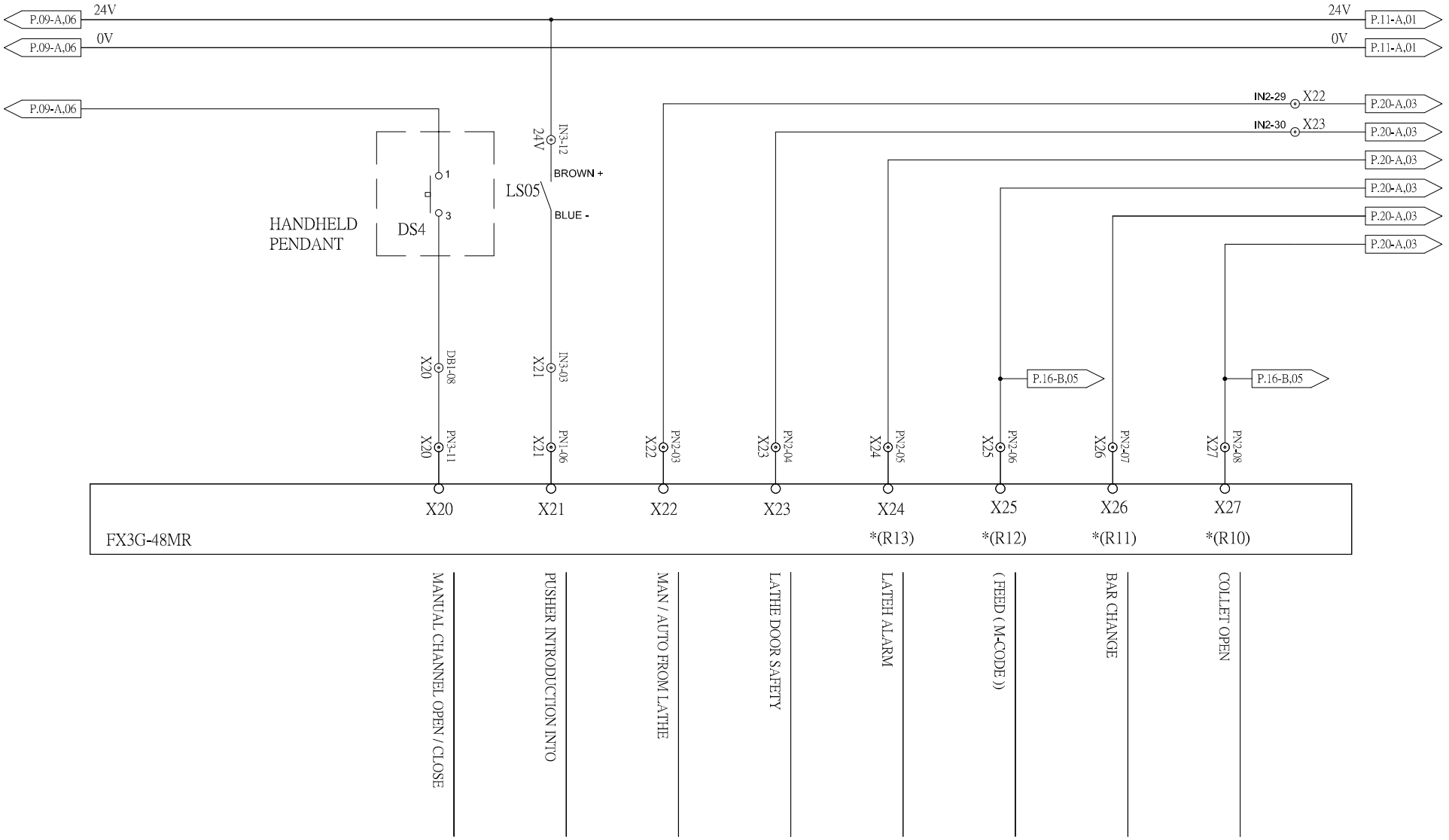
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC / PAGE: P. 07
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: Main circuit 2	
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG / VERSION: C0	



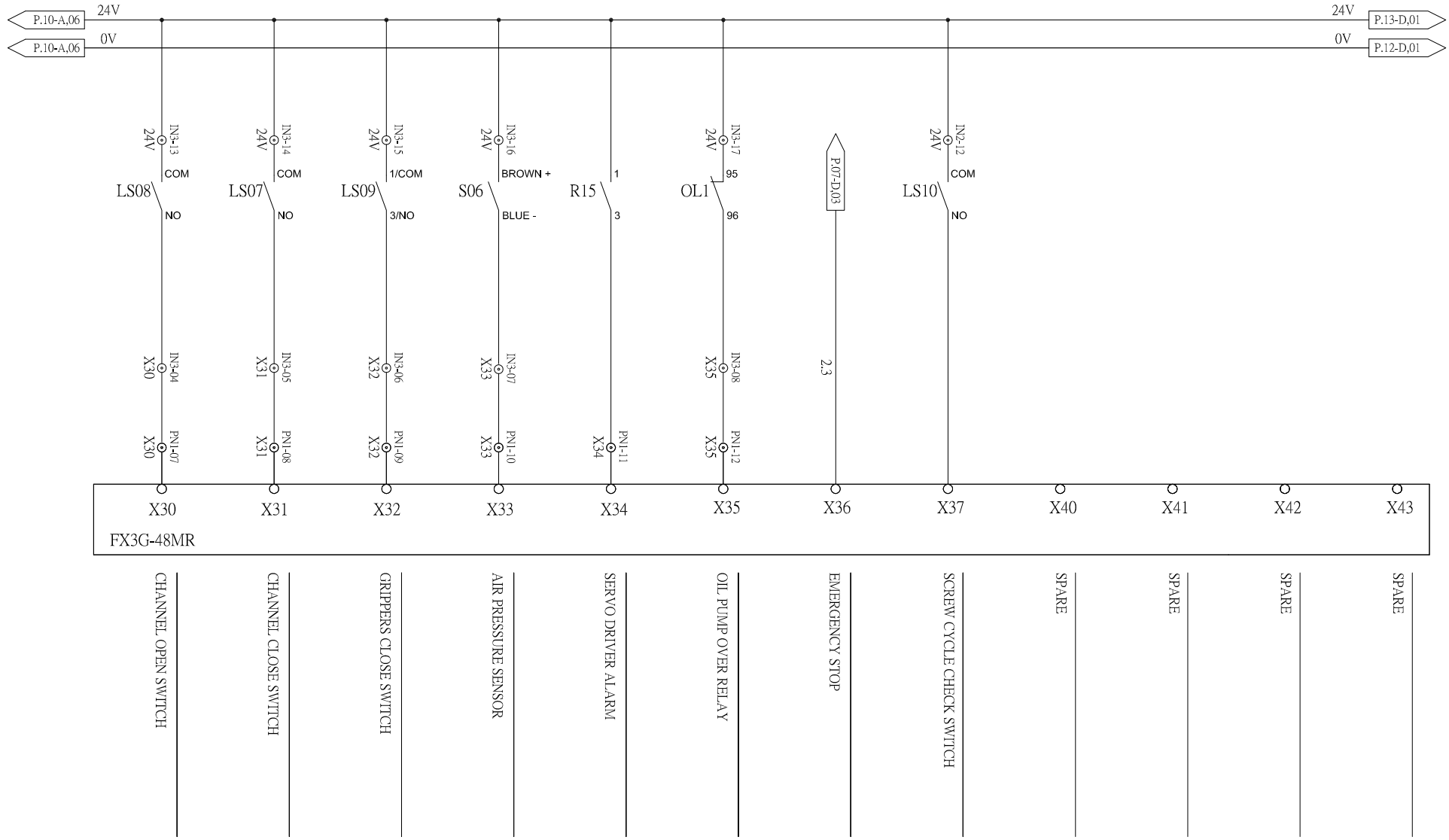
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC / PAGE: P. 08
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: PLC INPUT	
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG / VERSION: C0	



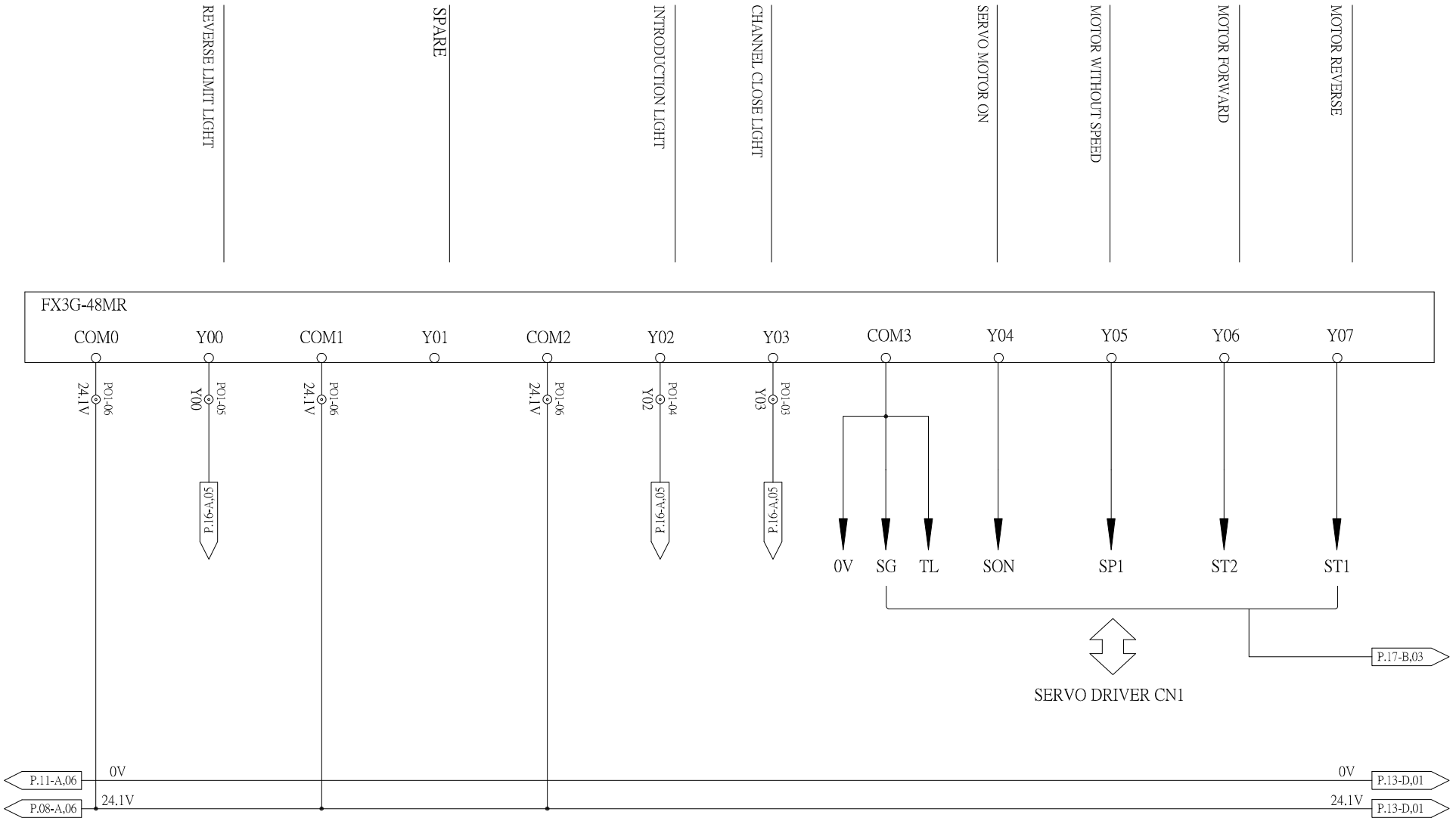
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 09
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: PLC INPUT		
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0



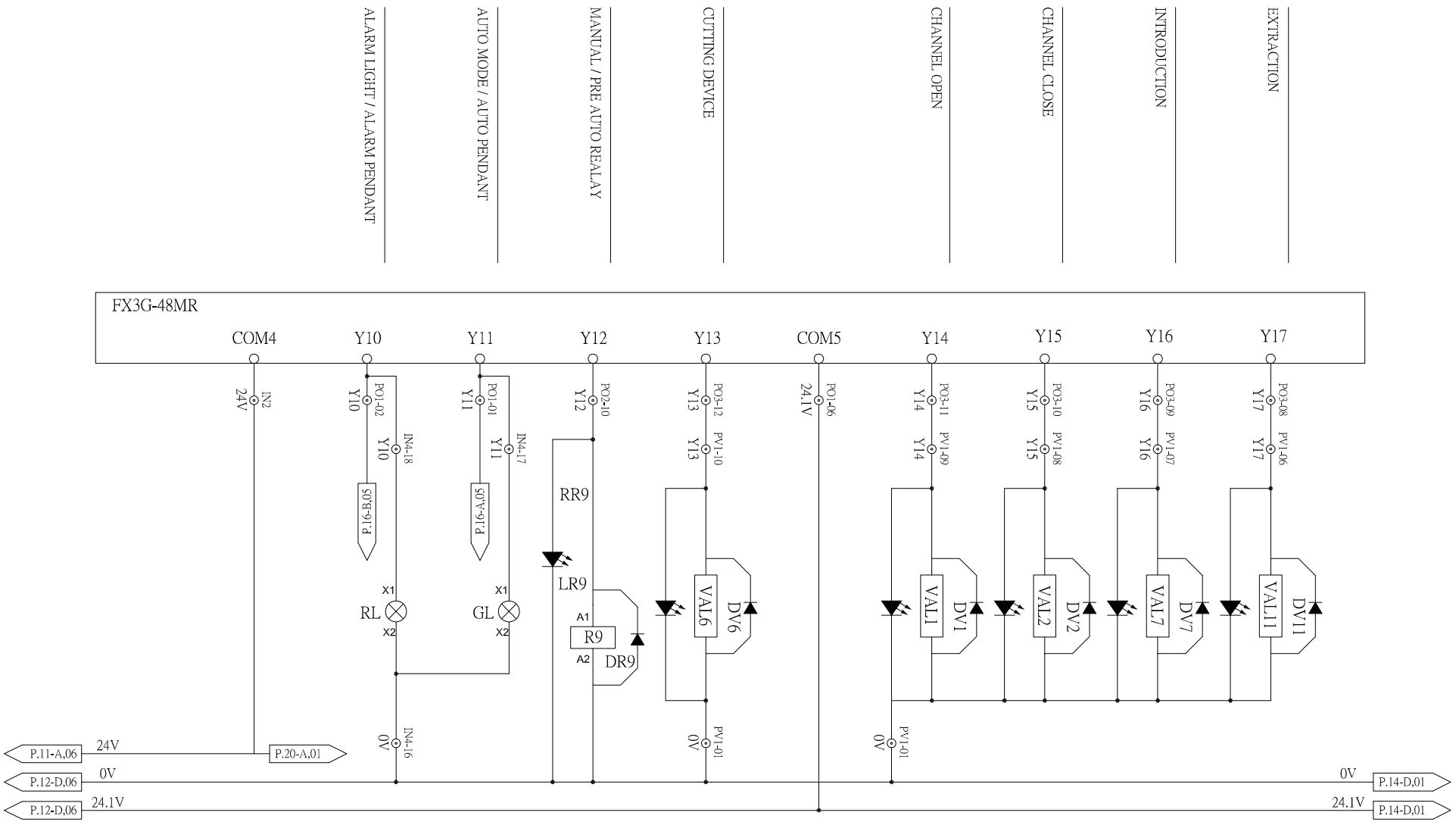
BAR FEEDER TYPE: RANGER 112			FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 10
LATHE NAME	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC		DRAWN BY: Seven	CHECKED BY	DESCRIPTION: PLC INPUT		
LATHE TYPE					DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0



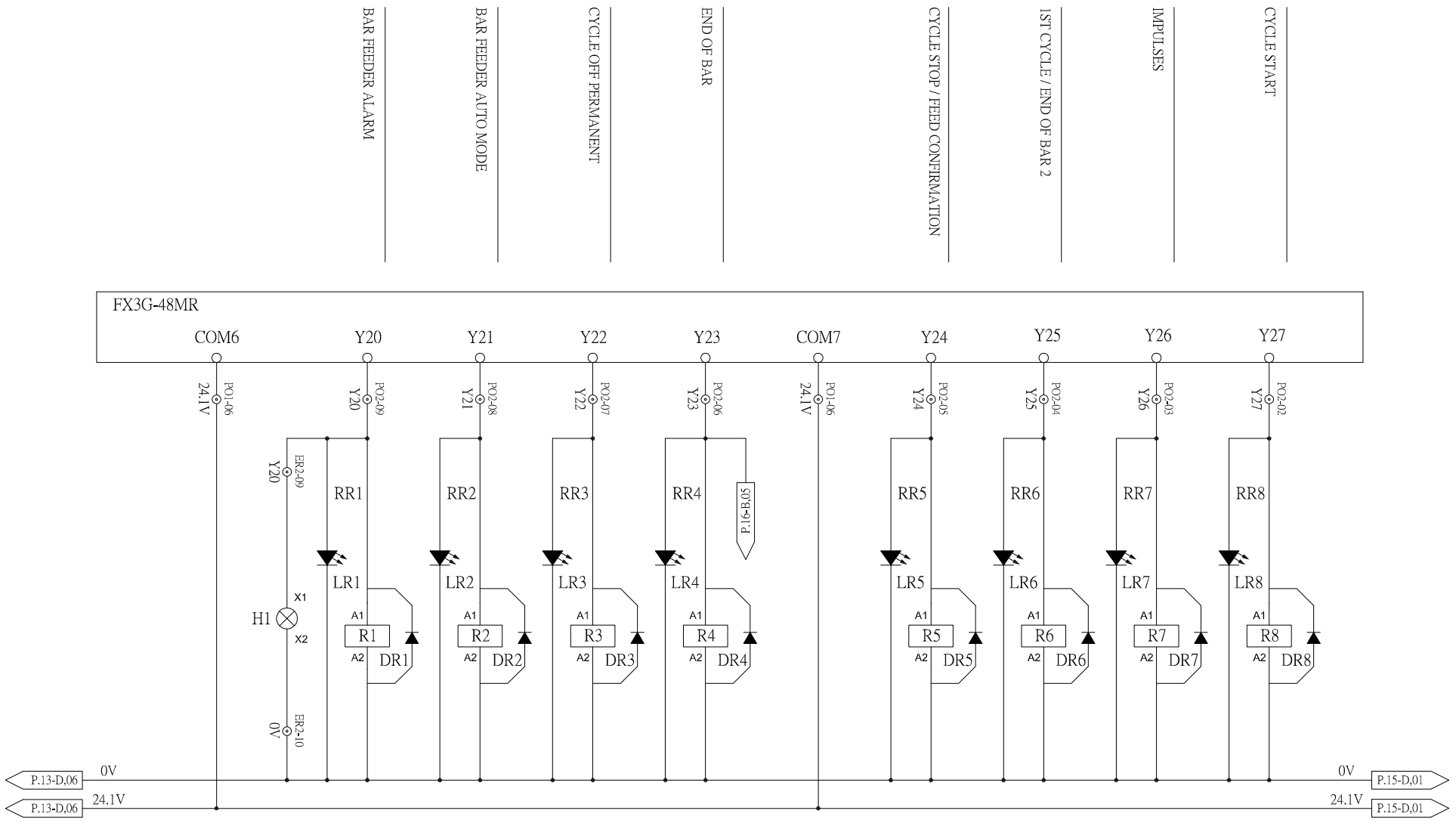
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 11
LATHE NAME:	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: PLC INPUT		
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG	VERSION: C0	



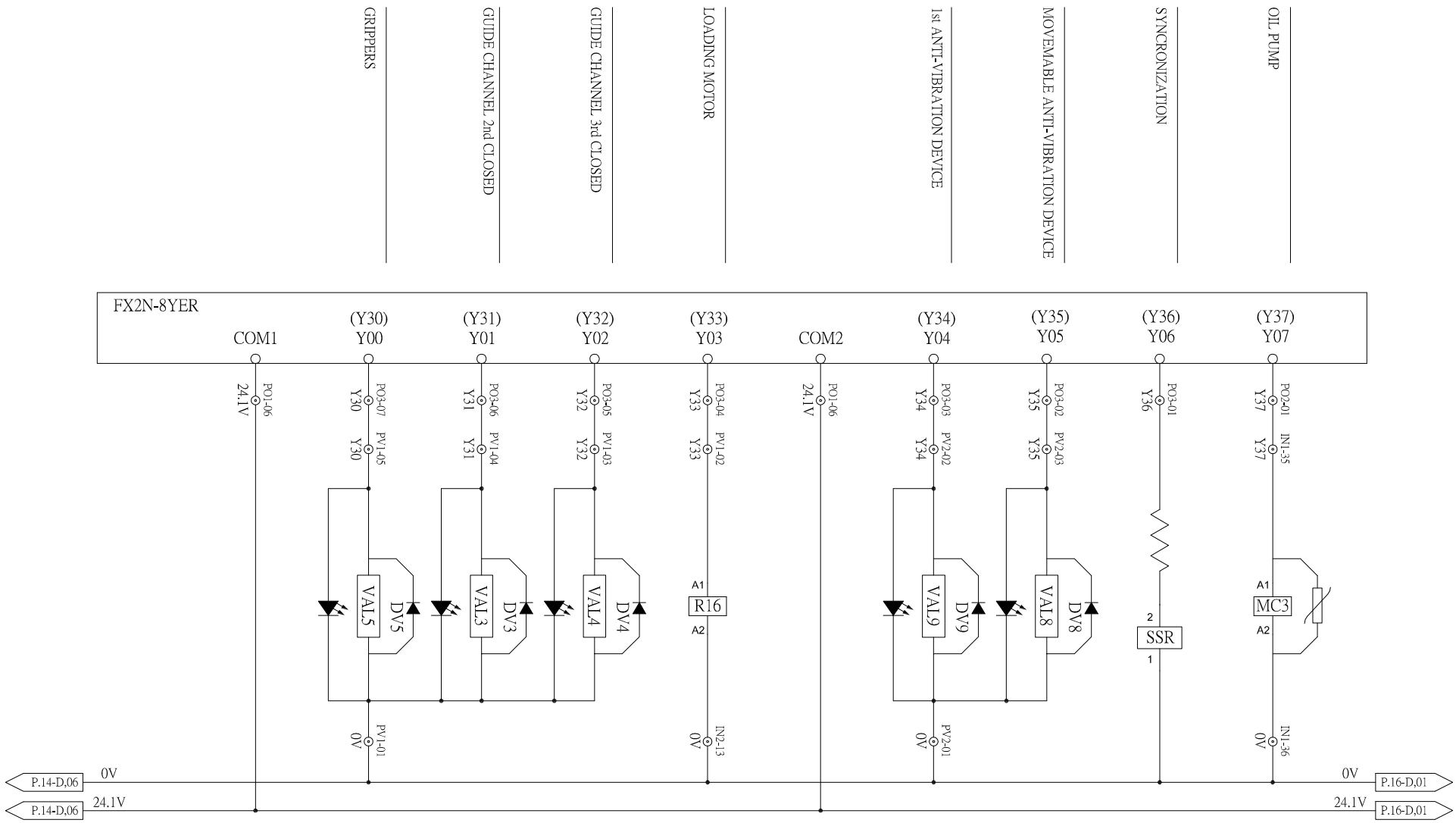
BAR FEEDER TYPE: RANGER 112	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 12
LATHE NAME:			DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: PLC OUTPUT		
LATHE TYPE:					DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0



BAR FEEDER TYPE			FIRST DATE	REVISION DATE	MAIN VOLTAGE	SIGNAL VOLTAGE	PAGE
RANGER 112	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC		2018/02/02	2018/03/27	220 VAC 3-PHASE	24VDC	P. 13
LATHE NAME			DRAWN BY	CHECKED BY	DESCRIPTION		
			Seven		PLC OUTPUT		
LATHE TYPE					DRAWING NO.		VERSION
					JV-EDGE UNI2(MIX)-EG		C0

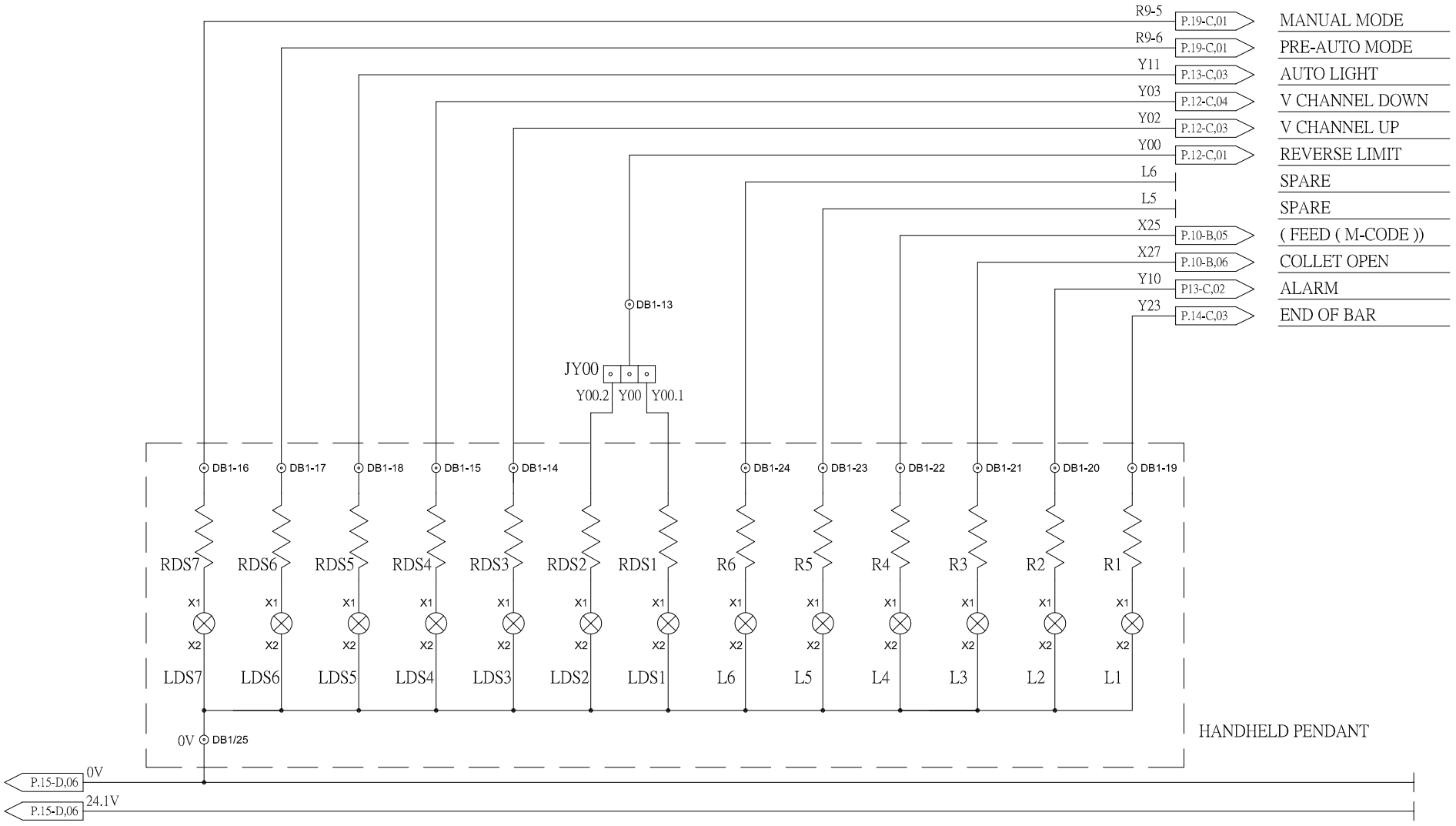


BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 14
LATHE NAME	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	DRAWN BY: Seven	CHECKED BY	DESCRIPTION: PLC OUTPUT		
LATHE TYPE				DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0



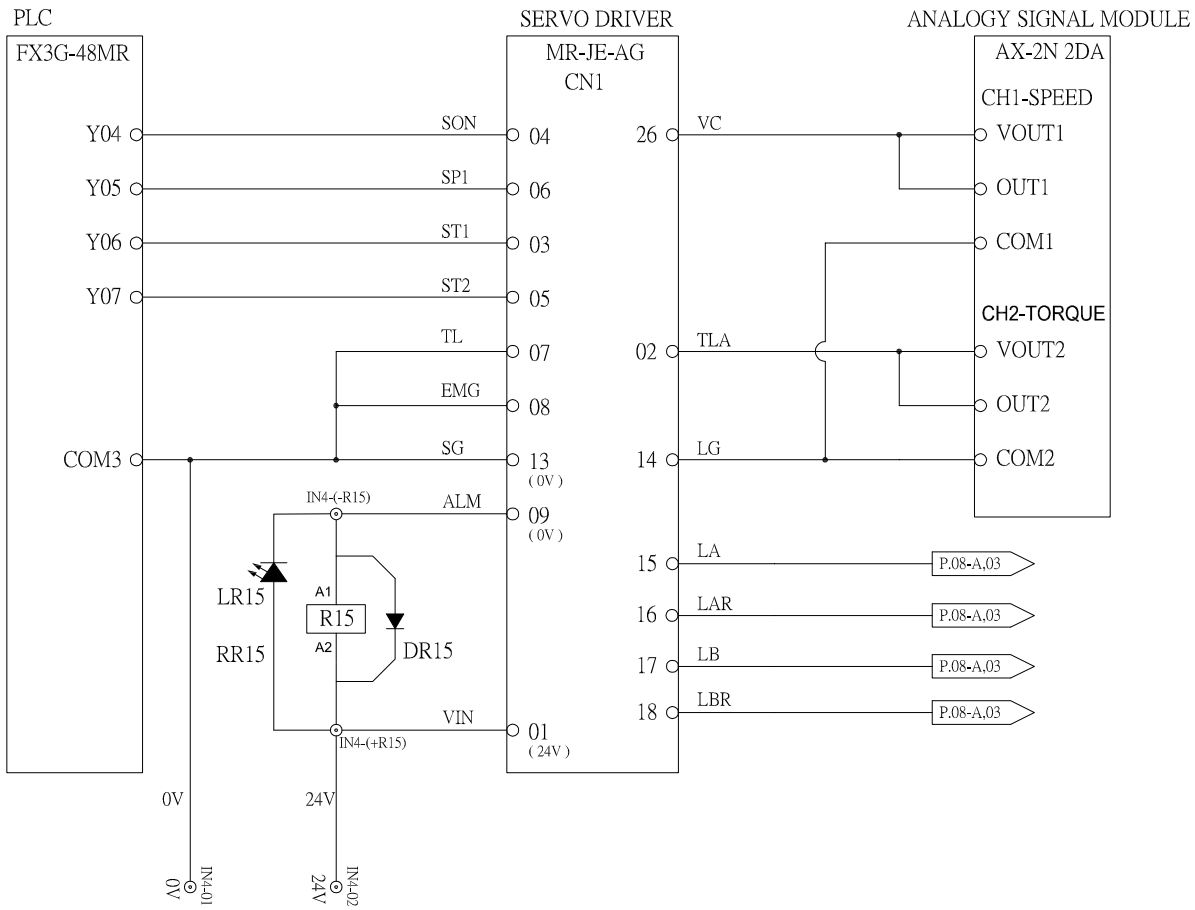
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 15
LATHE NAME		DRAWN BY: Seven	CHECKED BY	DESCRIPTION: PLC OUTPUT		
LATHE TYPE				DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0

EDGE TECHNOLOGIES
A DIVISION OF HYDROMAT INC



BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 16
LATHE NAME:		DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: LED circuit of Remote control pendant		
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0

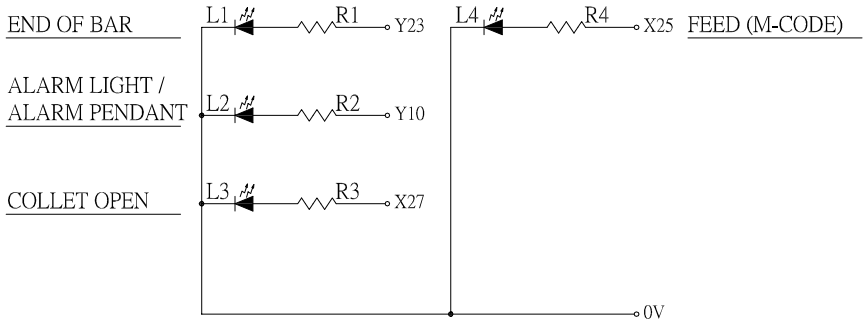
EDGE TECHNOLOGIES
A DIVISION OF HYDROMAT INC



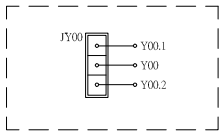
No.	Servo Driver Parameter Setting Steps.
01	P19 SET As 000E.
02	Turn OFF The Power of The Driver.
03	Turn ON The Power of The Driver.
04	P00 SET AS 2000.
05	P08 SET AS 0.
06	P25 SET AS 1000.
07	P27 SET AS 309.
08	P41 SET AS 0110.
09	P46 SET AS 0660.
10	P47 SET AS 0440.
11	P19 SET AS 000C.
12	Turn OFF The Power of The Driver.
13	Turn ON The Power of The Driver.

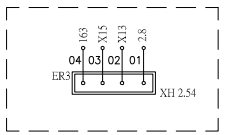
BAR FEEDER TYPE: RANGER 112		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 17
LATHE NAME:		DRAWN BY: Seven	CHECKED BY:	DESCRIPTION: Driver circuit of Servo motor		
LATHE TYPE:				DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0

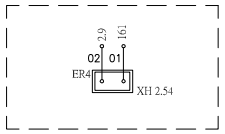
EDGE TECHNOLOGIES
A DIVISION OF HYDROMAT INC

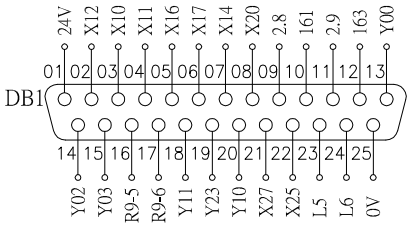


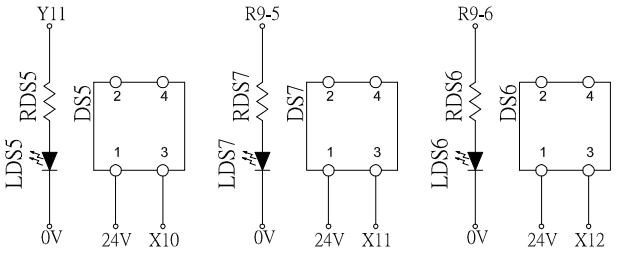
PGE 0205 KEY BOARD

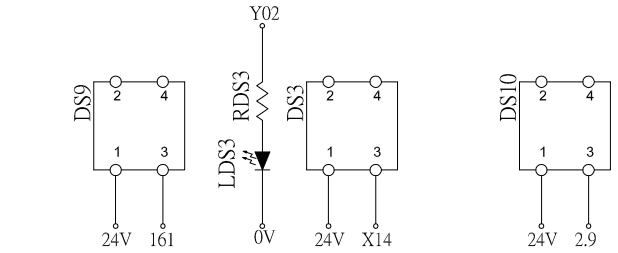


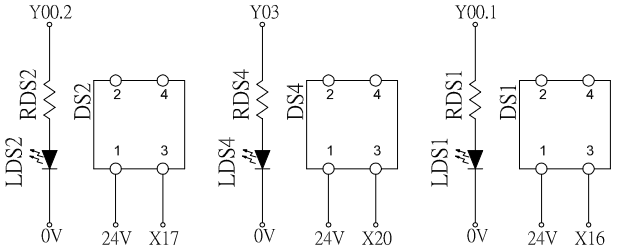




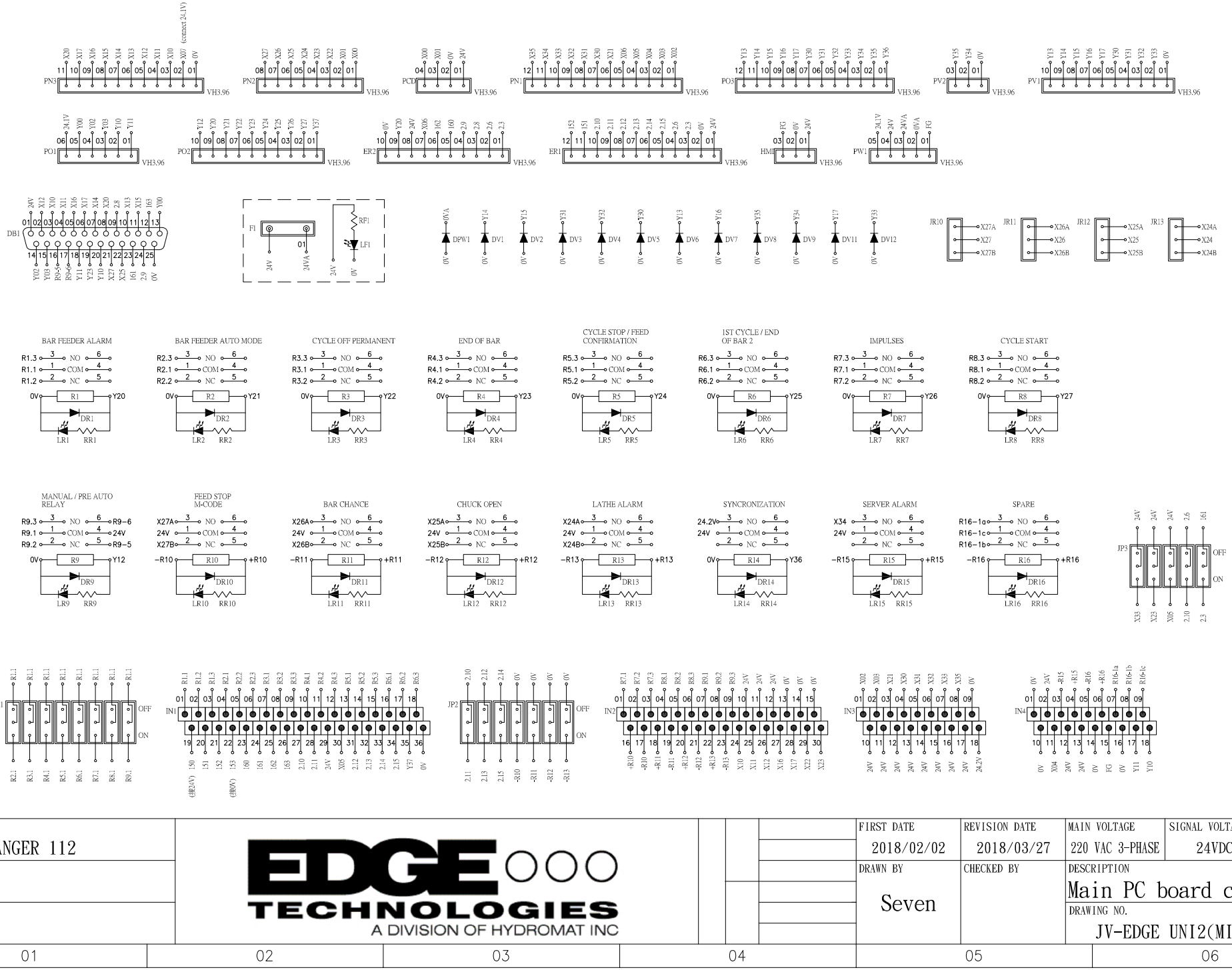




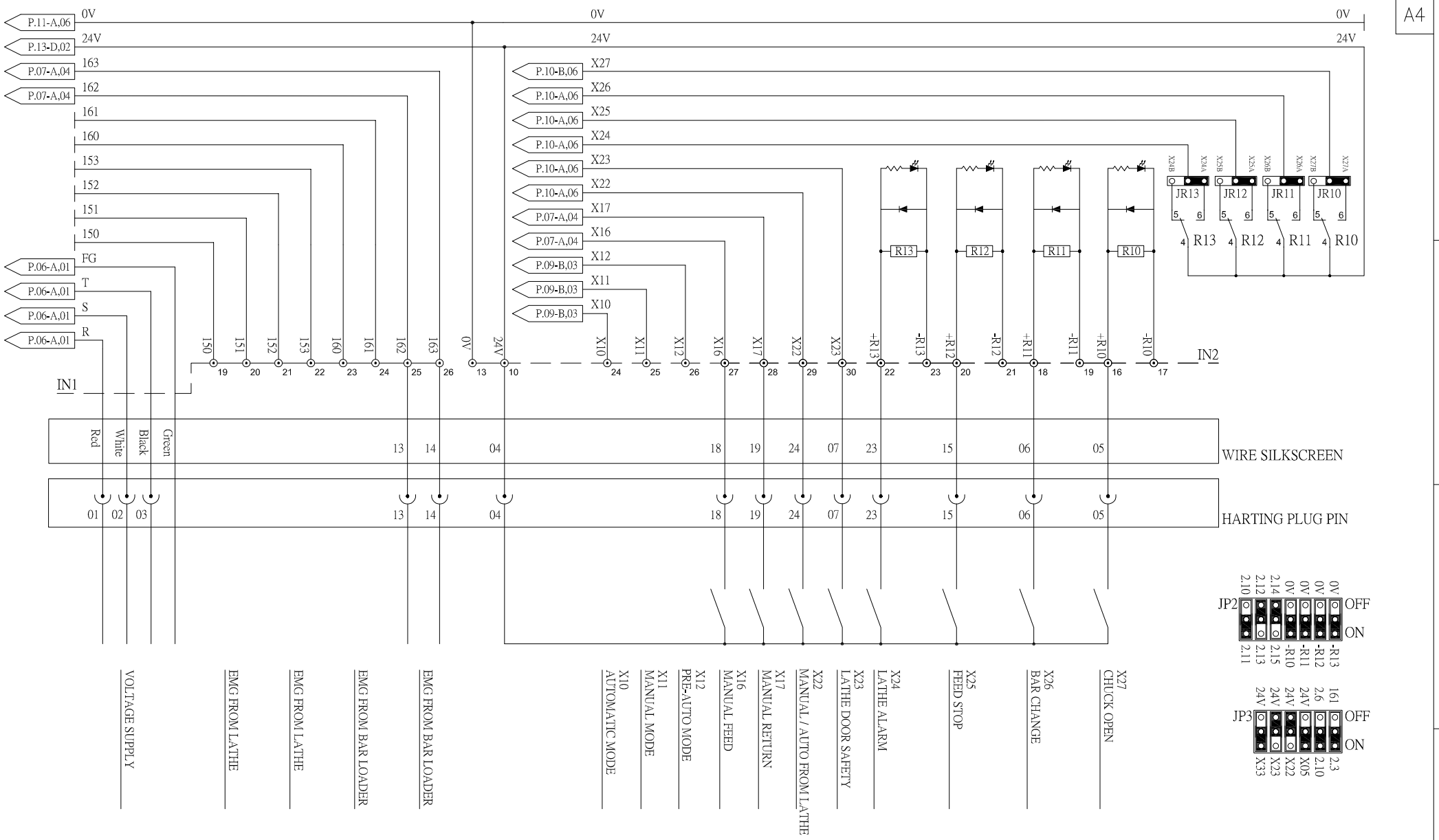




BAR FEEDER TYPE: RANGER 112	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC		FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC / PAGE: P. 18
LATHE NAME			DRAWN BY: Seven	CHECKED BY	DESCRIPTION: PC board circuit of Remote control pendant	
LATHE TYPE					DRAWING NO.: JV-EDGE UNI2(MIX)-EG	VERSION: C0

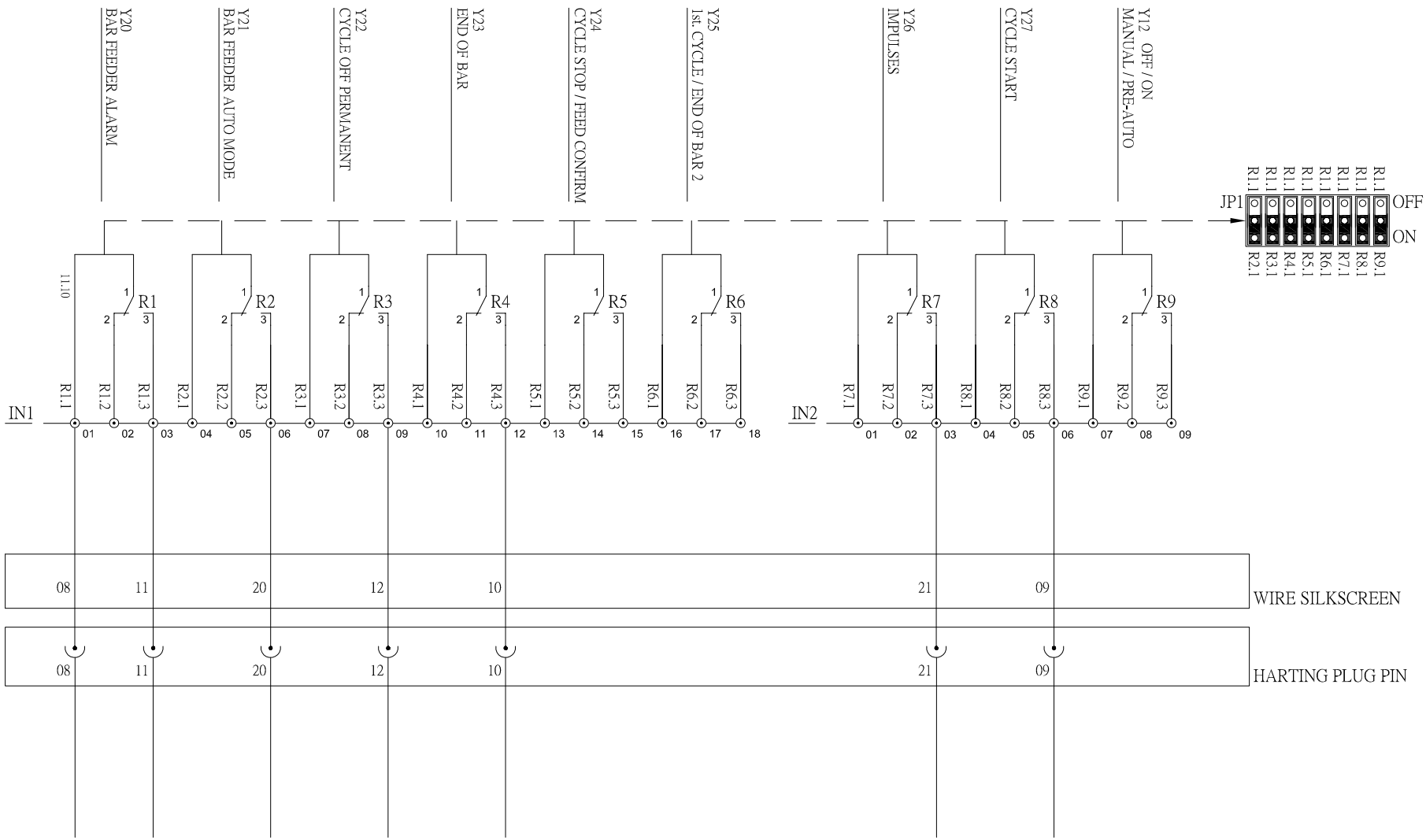


BAR FEEDER TYPE		FIRST DATE	REVISION DATE	MAIN VOLTAGE	SIGNAL VOLTAGE	PAGE
RANGER 112	EDGE TECHNOLOGIES A DIVISION OF HYDROMAT INC	2018/02/02	2018/03/27	220 VAC 3-PHASE	24VDC	P. 19
LATHE NAME		DRAWN BY	CHECKED BY	DESCRIPTION		
		Seven		Main PC board circuit		
LATHE TYPE				DRAWING NO.		VERSION
				JV-EDGE UNI2(MIX)-EG		C0

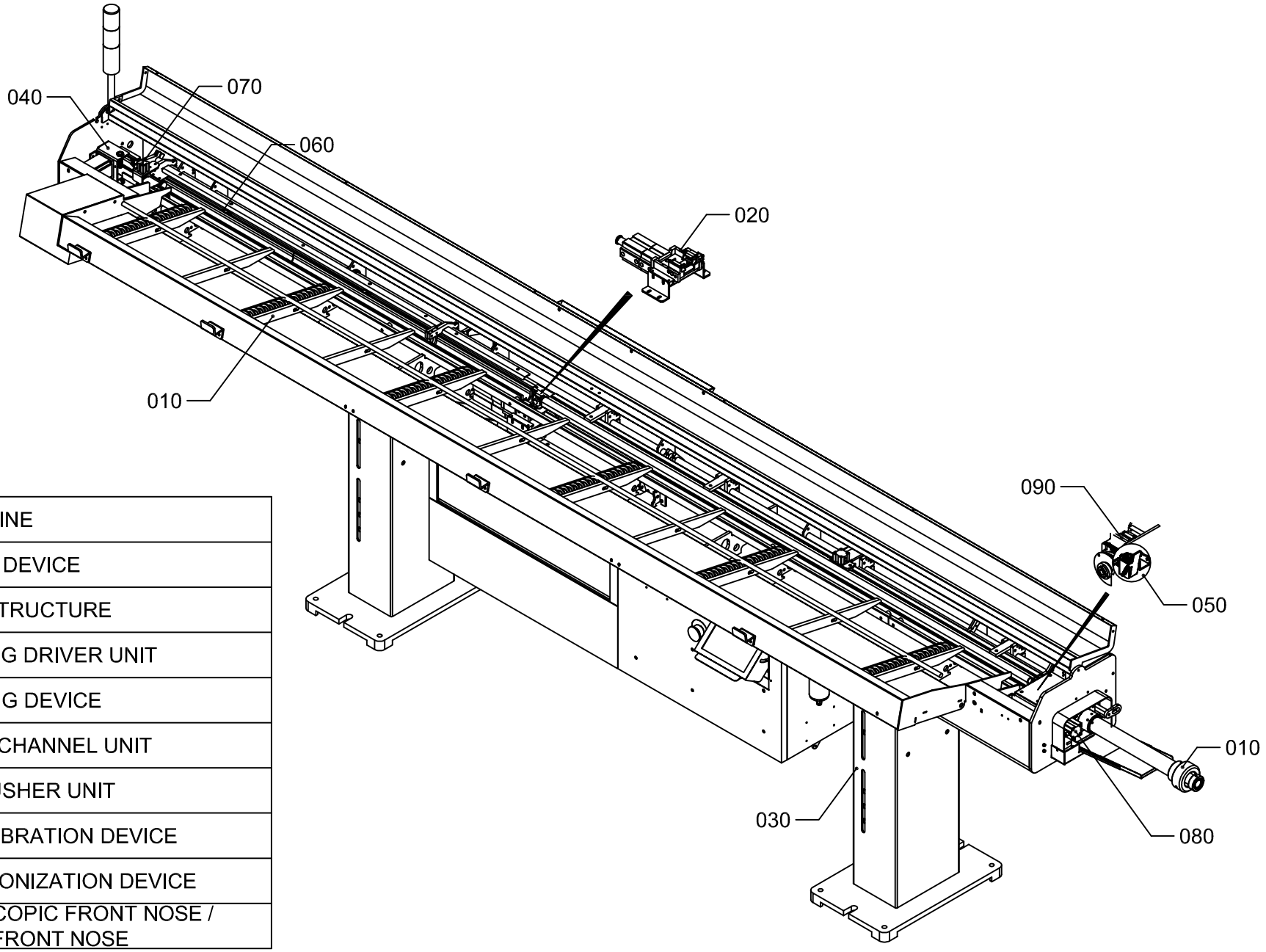


A4

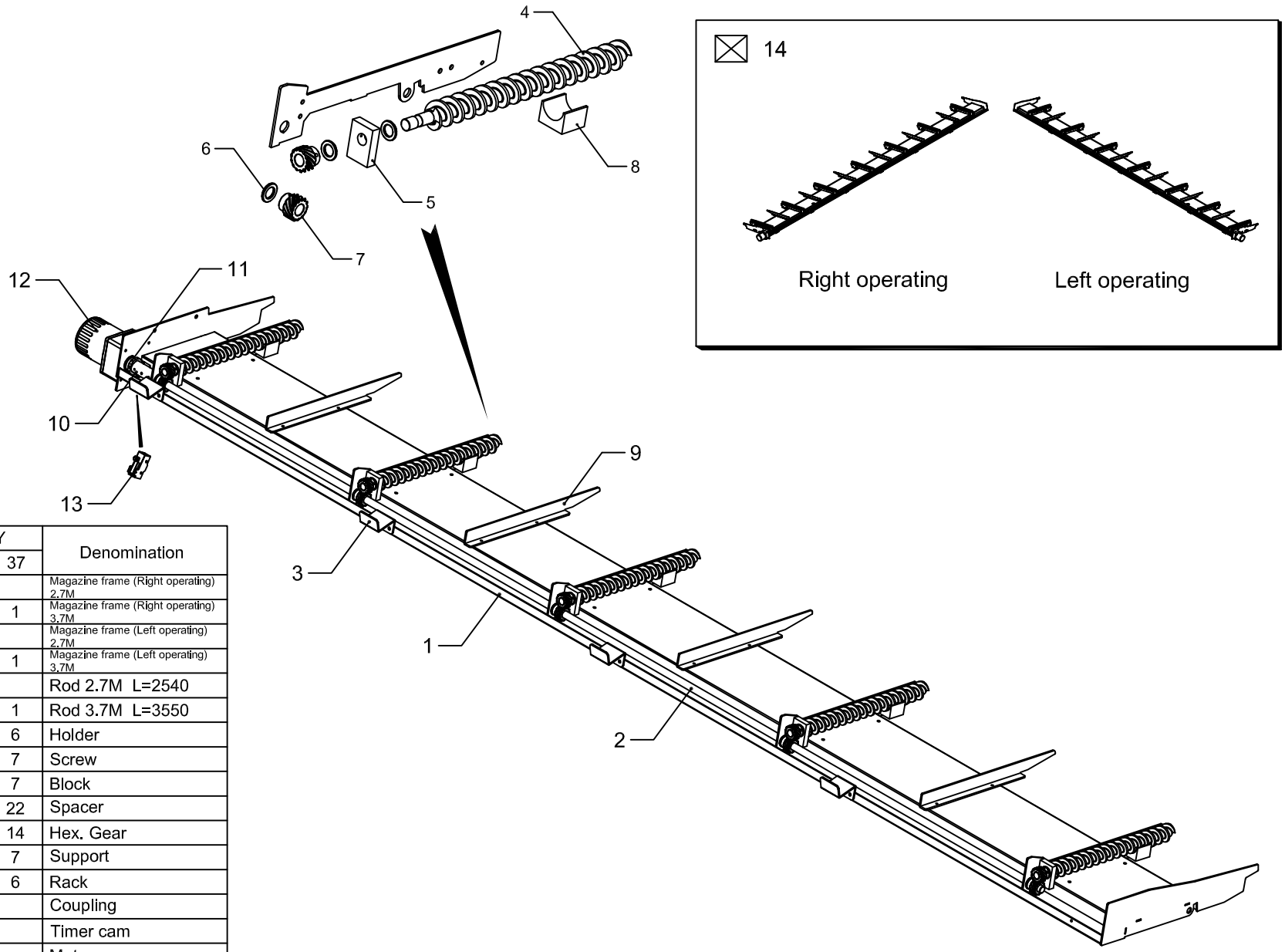
BAR FEEDER TYPE: RANGER 112	EDGE TECHNOLOGIES — A DIVISION OF HYDROMAT INC	Interface Connector	Male	0930-024-0521	FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE / SIGNAL VOLTAGE: 24VDC / PAGE: P. 20
LATHE NAME				0933-024-2601			
				L = 4.5 M	DRAWN BY: Seven	CHECKED BY	DESCRIPTION: Interface
LATHE TYPE			Female	0930-024-1230			
				0933-024-2701			DRAWING NO.: JV-EDGE UNI2(MIX)-EG / VERSION: C0
				L = 1.5 M			



BAR FEEDER TYPE: RANGER 112	EDGE TECHNOLOGIES — A DIVISION OF HYDROMAT INC	Interface Connector	Male	0930-024-0521	FIRST DATE: 2018/02/02	REVISION DATE: 2018/03/27	MAIN VOLTAGE: 220 VAC 3-PHASE	SIGNAL VOLTAGE: 24VDC	PAGE: P. 21
LATHE NAME				0933-024-2601	DRAWN BY: Seven	CHECKED BY	DESCRIPTION: Interface		
LATHE TYPE				L = 4.5 M			DRAWING NO.: JV-EDGE UNI2(MIX)-EG		VERSION: C0
			Female	0930-024-1230					
				0933-024-2701					
				L = 1.5 M					

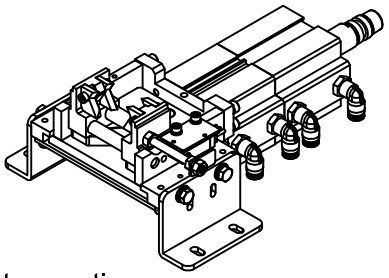


010	MAGAZINE
020	CLAMP DEVICE
030	MAIN STRUCTURE
040	FEEDING DRIVER UNIT
050	CUTTING DEVICE
060	GUIDE CHANNEL UNIT
070	BAR PUSHER UNIT
080	ANTI-VIBRATION DEVICE
090	SYCHRONIZATION DEVICE
100	TELESCOPIC FRONT NOSE / FIXED FRONT NOSE

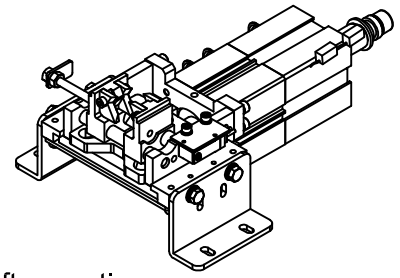


N.	Code	QTY		Denomination
		27	37	
1	RA26MA3027	1		Magazine frame (Right operating) 2.7M
	RA26MA3037		1	Magazine frame (Right operating) 3.7M
	RA26MA3028	1		Magazine frame (Left operating) 2.7M
	RA26MA3038		1	Magazine frame (Left operating) 3.7M
2	RA26MA3327	1		Rod 2.7M L=2540
	RA26MA3337		1	Rod 3.7M L=3550
3	RA26MA3900	4	6	Holder
4	RA26MA2900	5	7	Screw
5	RA26MA2500	5	7	Block
6	RA26MA2600	16	22	Spacer
7	RA26MA2800	10	14	Hex. Gear
8	RA26MA2700	5	7	Support
9	RA26MA3810	9	6	Rack
10	RA26MA3400	1		Coupling
11	RA26MA3100	1		Timer cam
12	607230600	1		Motor
13	J310407	1		Limit switch
14	RA26MA3038		1	Magazine frame 3.7M

☒ 24

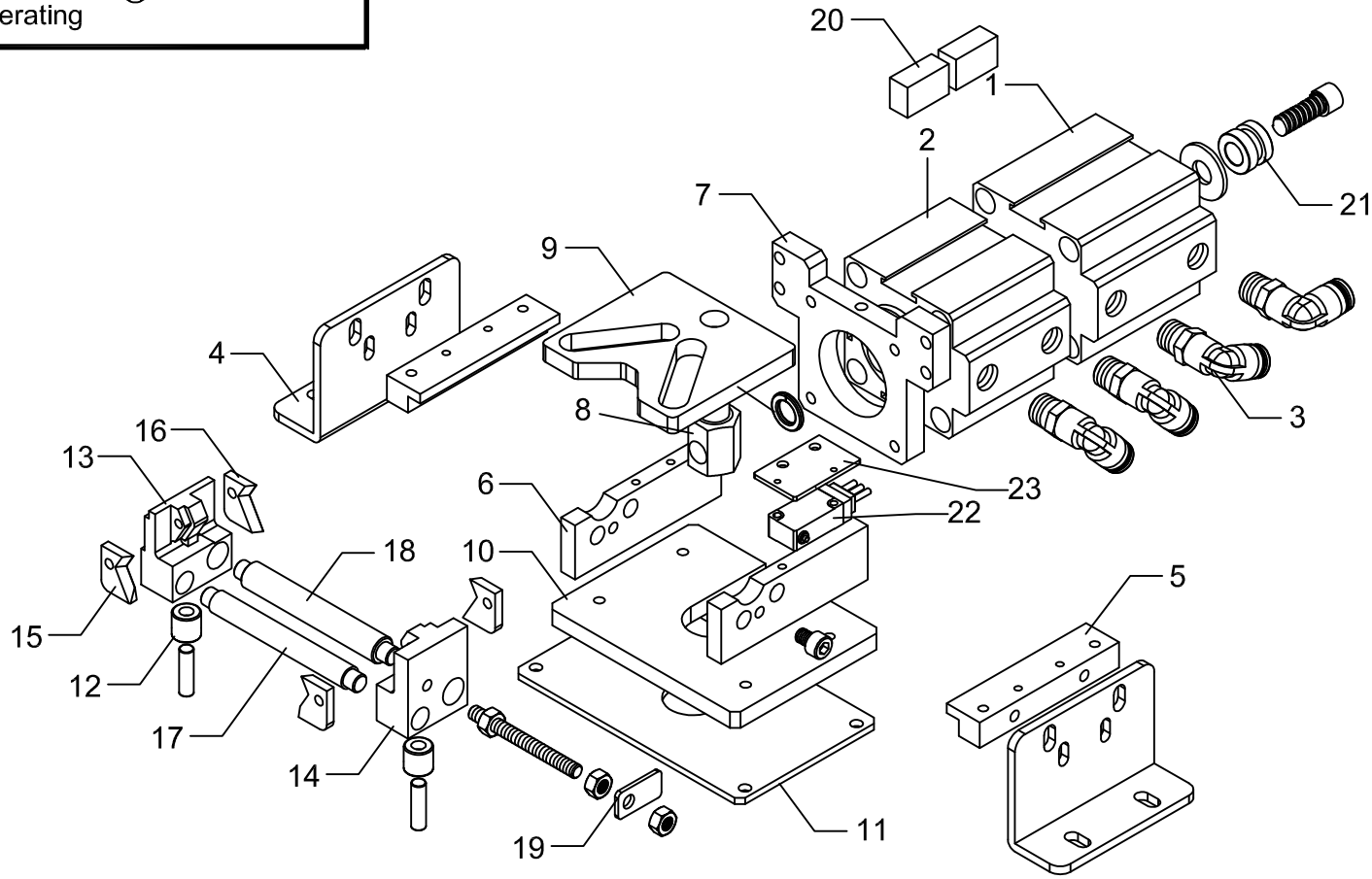


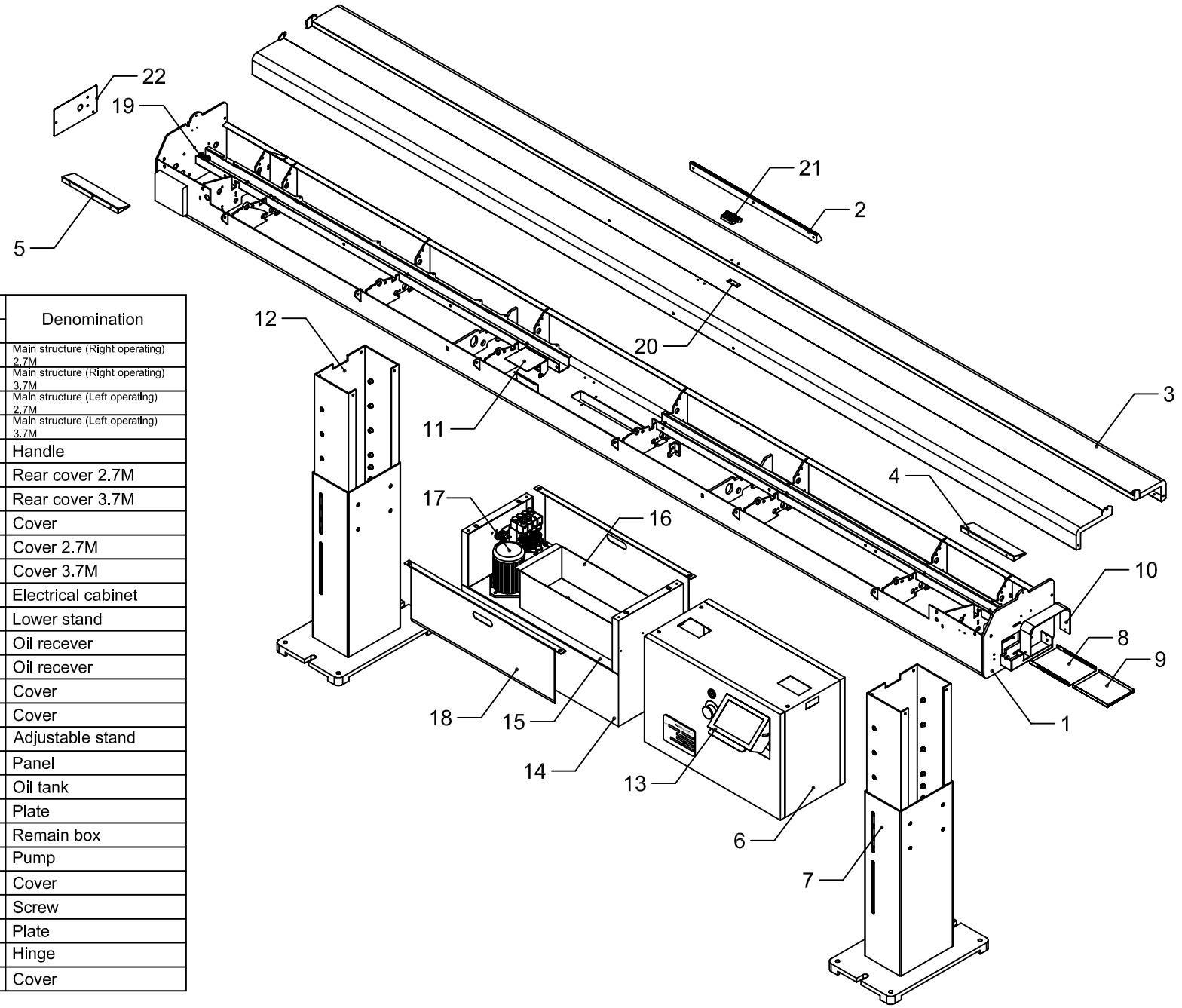
Right operating



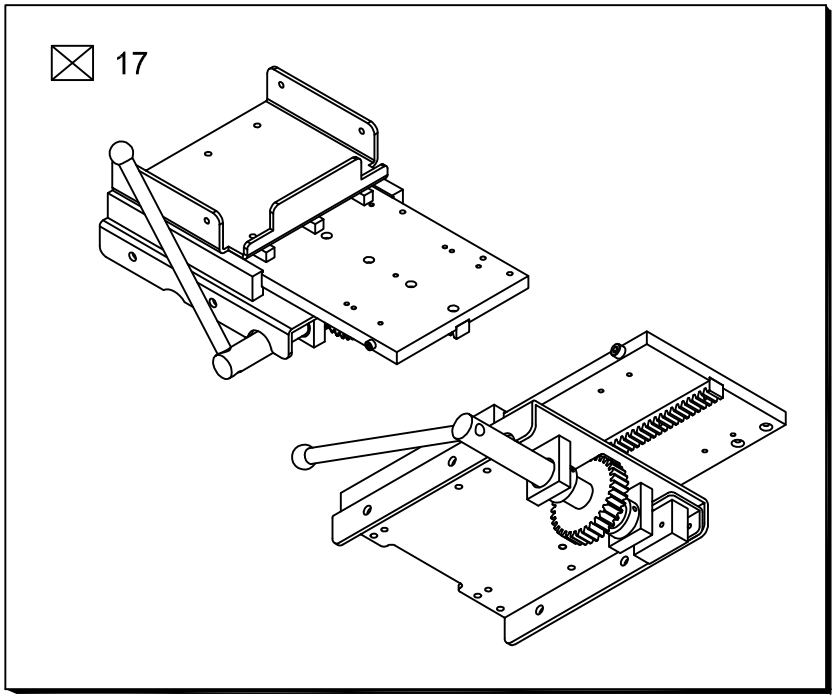
Left operating

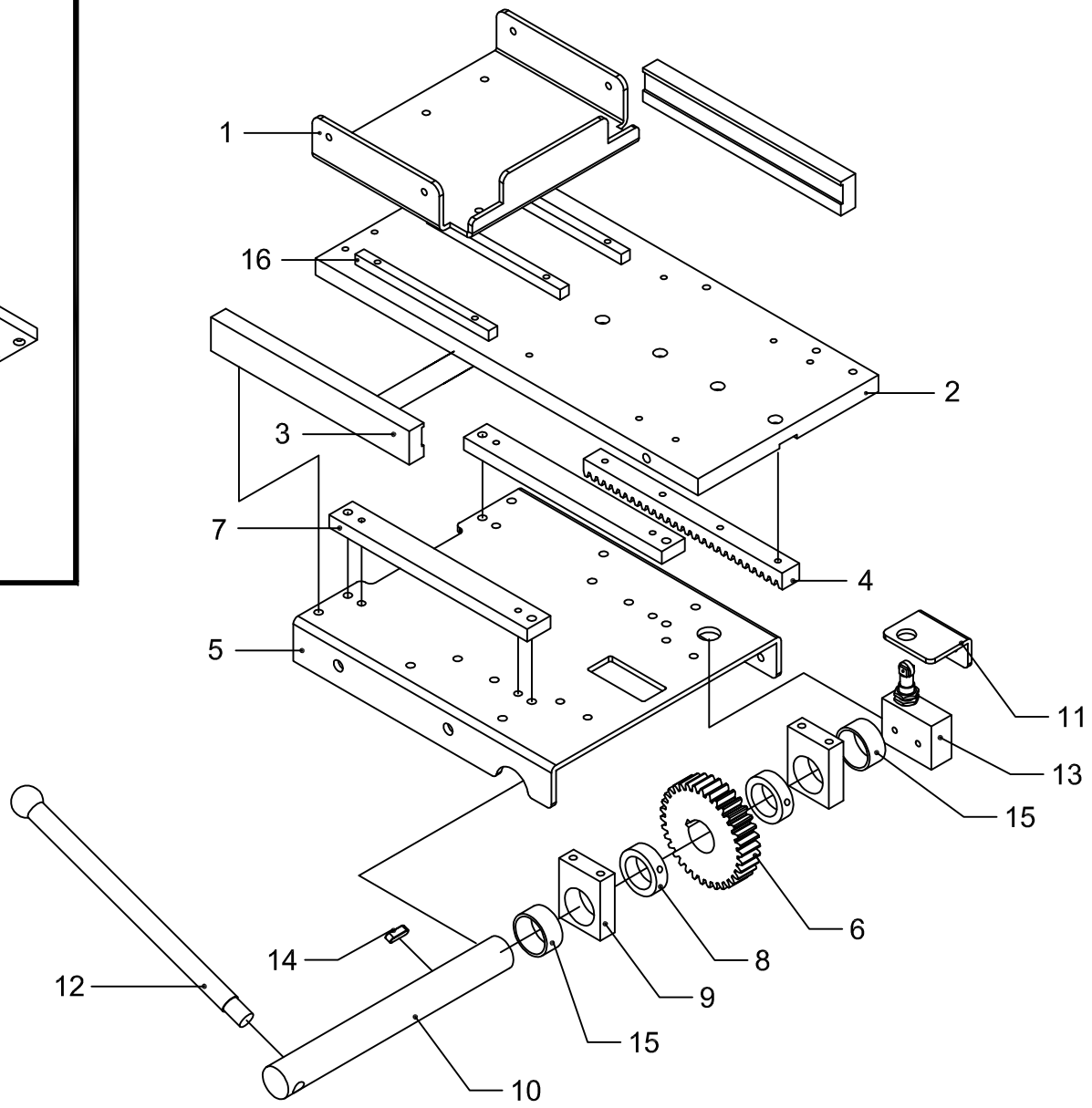
N.	Code	QTY	Denomination
1	A11131801	1	Cylinder SDA-50x30
2	A11131800	1	Cylinder SDAS-50x30
3	A13120100	4	Bended connector SPL 6-02
4	RA26GR1000	2	Plate
5	RA26GR0800	2	Plate
6	RA26GR0410	2	Support
7	RA26GR0600	1	Plate
8	RA26GR1200	1	Sensor shaft
9	RA26GR0510	1	Sliding plate
10	RA26GR0700	1	Sliding plate
11	RA26GR0900	1	Plate
12	RA26GR1900	2	Bushing
13	RA26GR0130	1	Anchort (L)
14	RA26GR0140	1	Anchort (R)
15	RA26GR0300	2	Clip cutter
16	RA26GR0310	2	Clip cutter
17	RA26GR0210	1	Arbor
18	RA26GR0200	1	Arbor
19	RA26GR1300	1	Base
20	A12140501	2	MIcroswitch LY-67A-5M
21	RA26GR1100	1	Bushing
22	J310403	1	Switch D2VW-5-1M
23	RA26GR1400	1	Anchor
24	RA26GR000A	1	Clamp device (Right operating)
	RA26GR001A	1	Clamp device (Left operating)



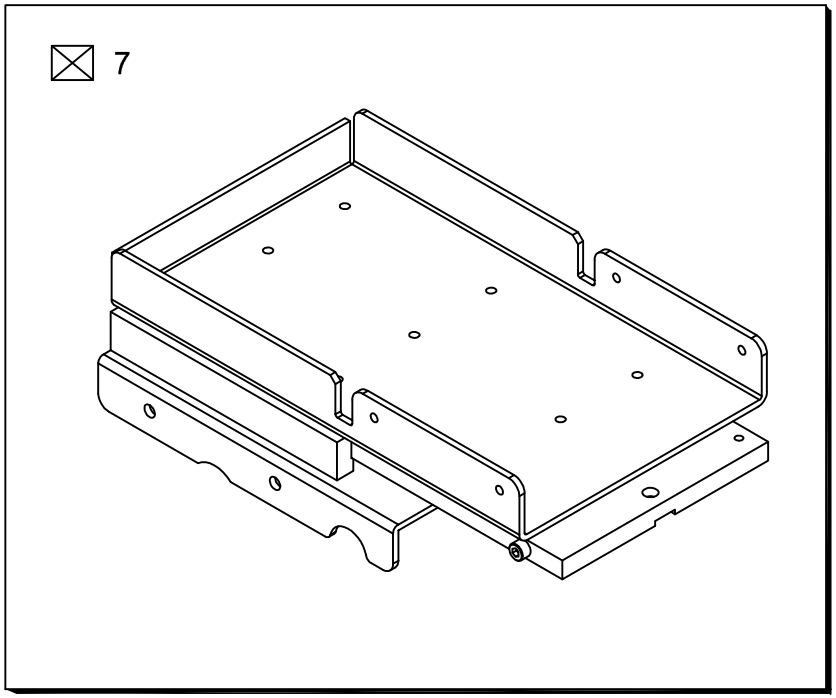


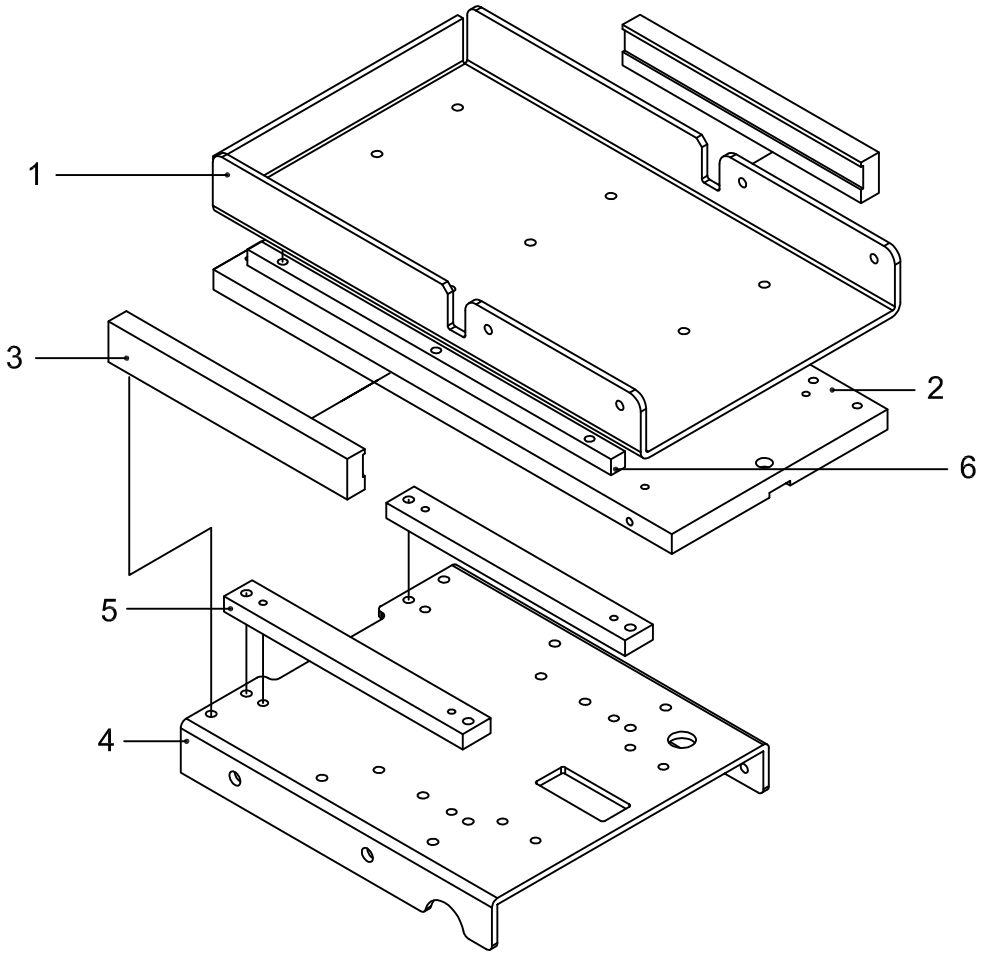
N.	Code	QTY		Denomination
		27	37	
1	RA26BA0229	1		Main structure (Right operating) 2.7M
	RA26BA0239		1	Main structure (Right operating) 3.7M
	RA26BA0228	1		Main structure (Left operating) 2.7M
	RA26BA0238		1	Main structure (Left operating) 3.7M
2	RA26BA0401	2		Handle
3	RA26BA020427	2		Rear cover 2.7M
	RA26BA020437		2	Rear cover 3.7M
4	RA26BA3000	1		Cover
5	RA26BA3030	1		Cover 2.7M
	RA26BA3020		1	Cover 3.7M
6	P76200602	1		Electrical cabinet
7	RA26BA0800	2		Lower stand
8	RA26BA0900	1		Oil recever
9	RA26BA1000	1		Oil recever
10	RA26BA1100	1		Cover
11	RA26BA1200	1		Cover
12	P76200100	2		Adjustable stand
13	P76200604	2		Panel
14	RA26OL0100	1		Oil tank
15	RA26OL0200	1		Plate
16	P76200500	1		Remain box
17	RA26OL0401	1		Pump
18	RA26OL0510	2		Cover
19	RA26BA2900	1		Screw
20	AV51BA3500	2		Plate
21	G8112000A	1	2	Hinge
22	RA26BA3210	1		Cover



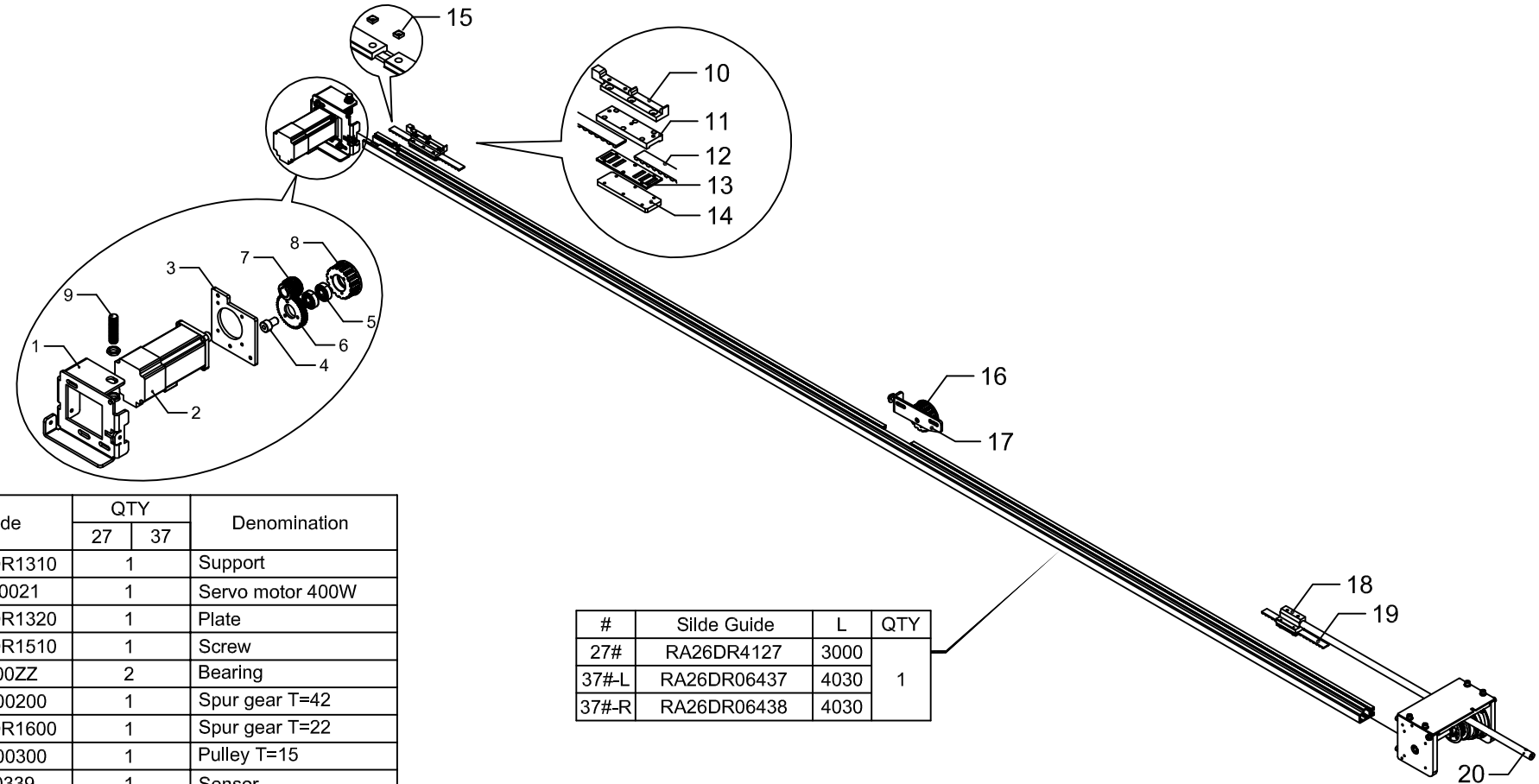


N.	Code	QTY	Denomination
1	RA26MZ1300	1	Plate
2	P35200200	1	Plate
3	P35200300	2	Track
4	P35200400	1	Rack
5	P35200500	1	Plate
6	P35200600	1	Pinion 34T
7	P35200700	2	Support
8	P35200800	2	Ring
9	P35200900	2	Support
10	P35201000	1	Arbor
11	P35201100	1	Plate
12	P35201200	1	Handle
13	J310409	1	Micro switch TZ-7311
14	ZS06060620	1	Shaft key 6x6x20
15	BSF2815	2	Bearing SF-2815
16	RA26MZ1210	3	Support
17	RA26MZ000A	1	Axial track device



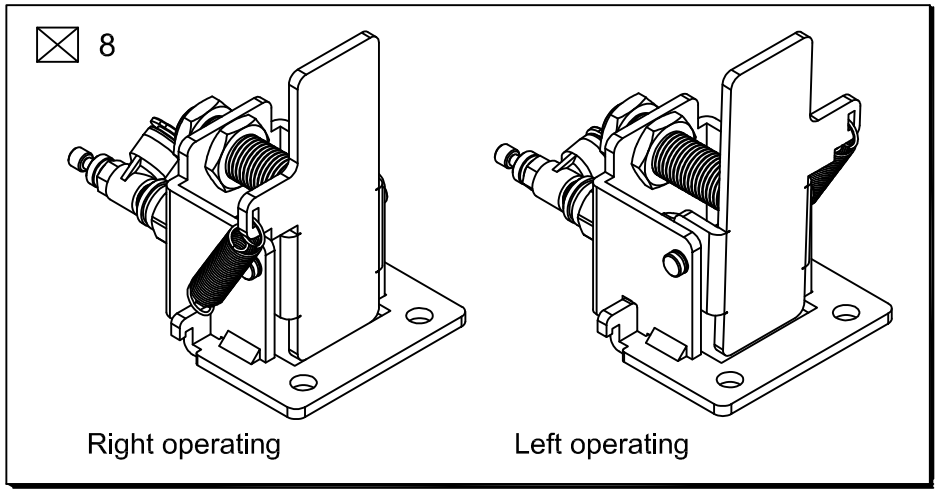


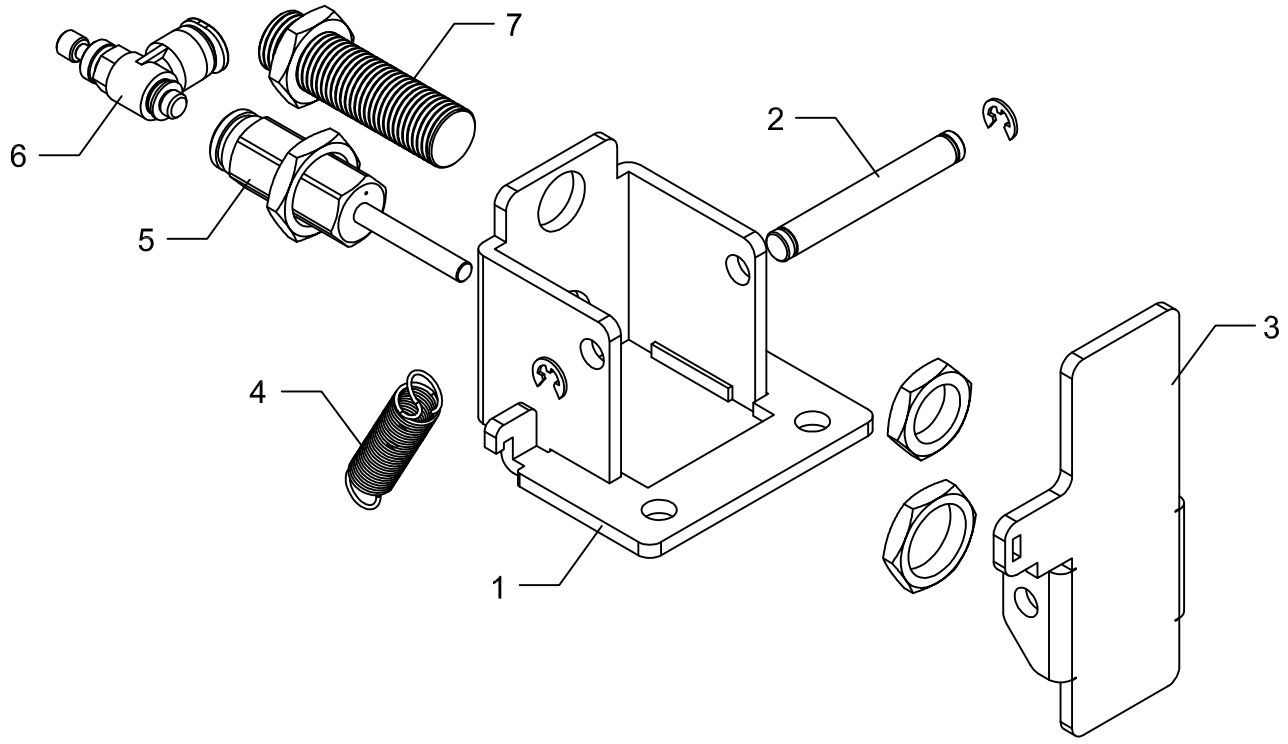
N.	Code	QTY	Denomination
1	RA26MZ1100	1	Plate
2	P35200200	1	Plate
3	P35200300	2	Track
4	P35200500	1	Plate
5	P35200700	2	Support
6	RA26MZ1200	3	Support
7	RA26MZ001A	1	Axial track device



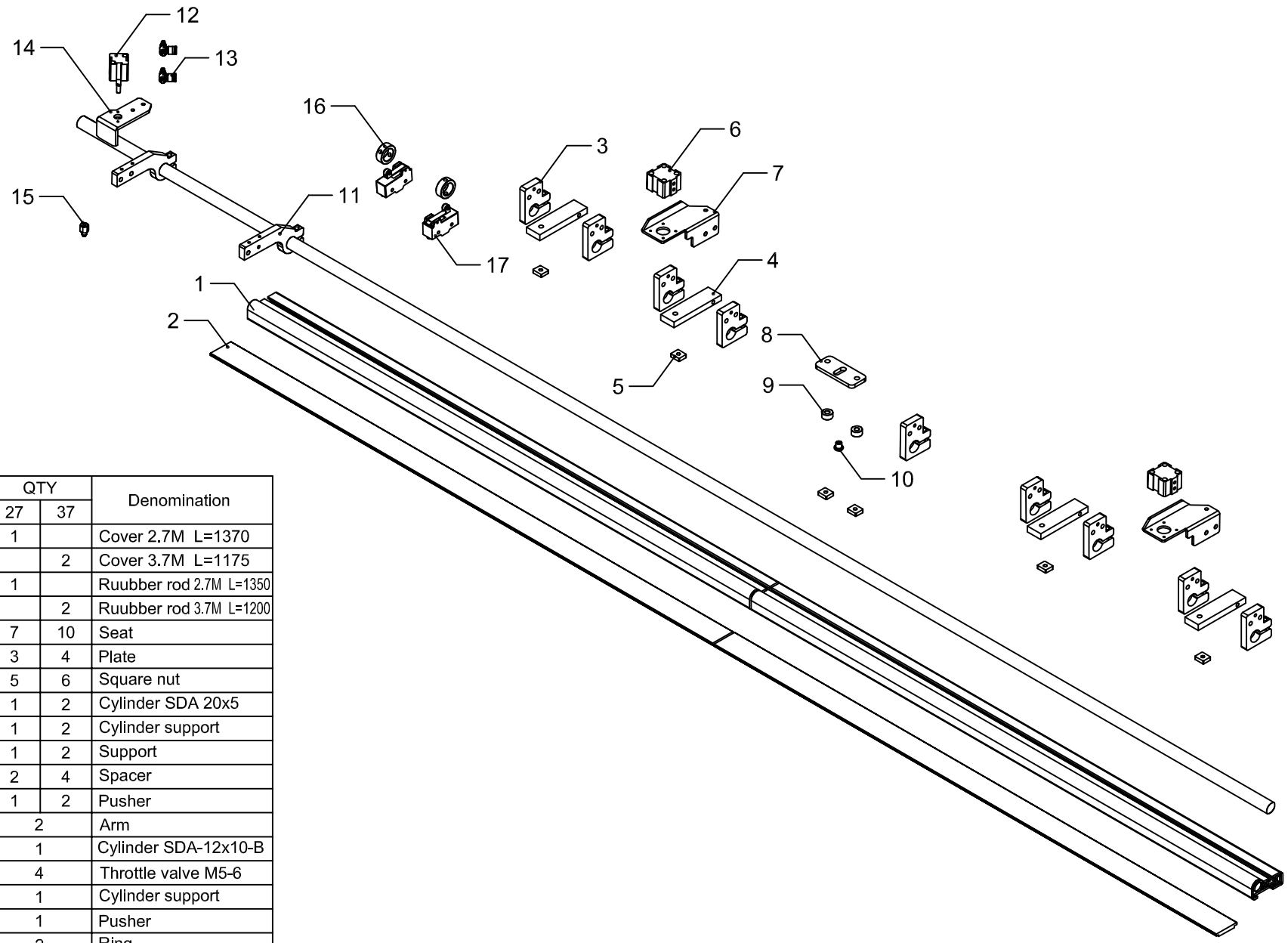
N.	Code	QTY		Denomination
		27	37	
1	RA26DR1310	1		Support
2	J2210021	1		Servo motor 400W
3	RA26DR1320	1		Plate
4	RA26DR1510	1		Screw
5	B6000ZZ	2		Bearing
6	P48200200	1		Spur gear T=42
7	RA26DR1600	1		Spur gear T=22
8	P48200300	1		Pulley T=15
9	J310339	1		Sensor
10	RA26DR0310	1		Carriage
11	RA26DR4200	1		Plate
12	RA26DR4827	1		Belt 2.7M L=6308
	RA26DR064837		1	Belt 3.7M L=8368
13	RA26DR4300	1		Fixed plate
14	RA26DR4400	1		Plate
15	RA26CH0610	2		Base
16	P48200300	1		Pulley 15Z
17	RA26DR4601	1		Belt plate
18	RA26DR4500	1		Slide carriage
19	RA26DR4800	1		Belt
20	RA26DR4700	1		Rod

#	Silde Guide	L	QTY
27#	RA26DR4127	3000	1
37#-L	RA26DR06437	4030	
37#-R	RA26DR06438	4030	

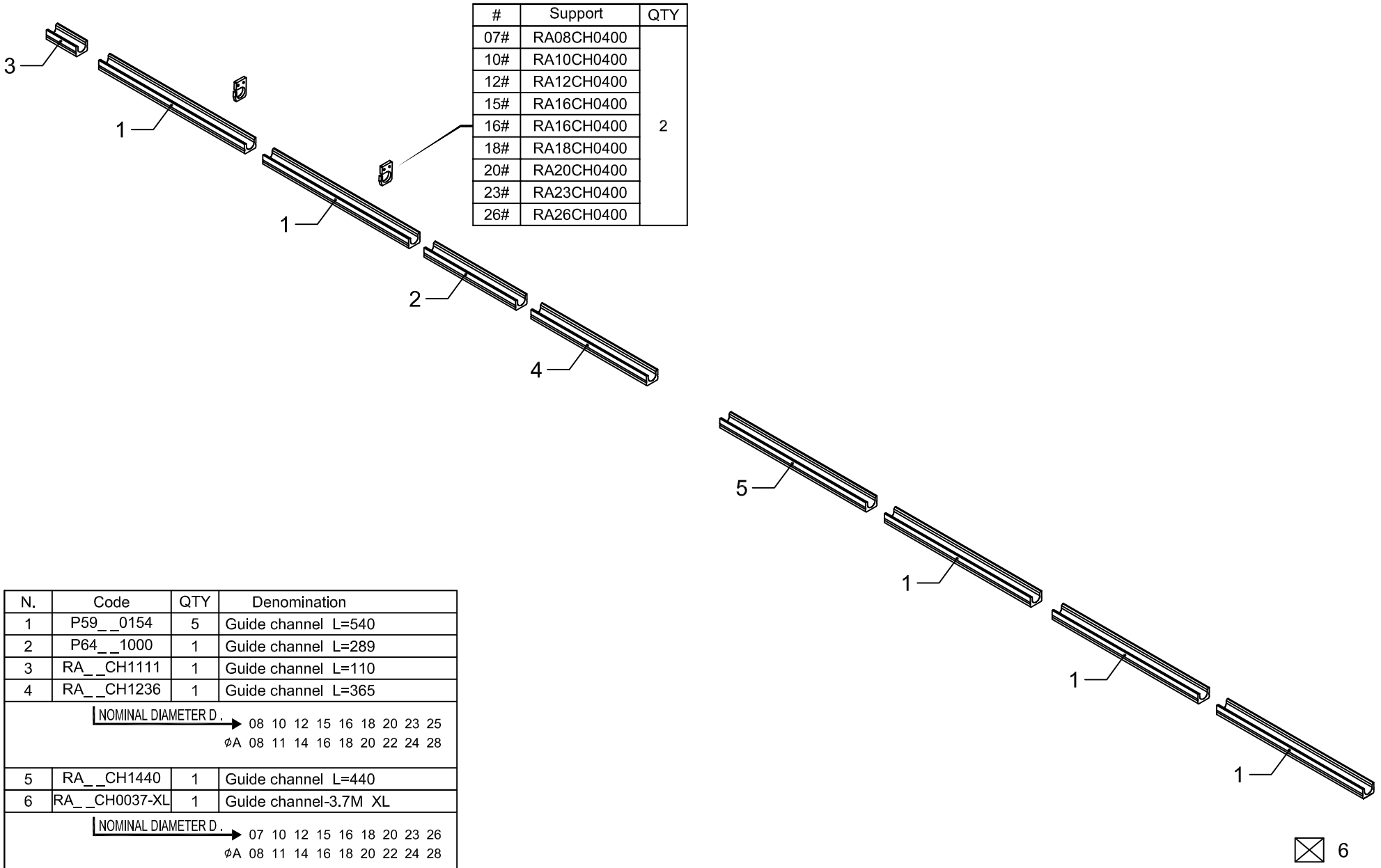




N.	Code	QTY	Denomination
1	RA26FA0600	1	Seat
2	RA26FA0300	1	Shaft
3	RA26FA0401	1	Plate (Right operating)
	RA26FA0403	1	Plate (Left operating)
4	RA26FA0500	1	Spring
5	A11131501	1	Cylinder
6	A12130301	1	Throttle valve
7	J310338	1	Sensor switch
8	RA26FA000A	1	Cutting device (Right operating)
	RA26FA001A	1	Cutting device (Left operating)

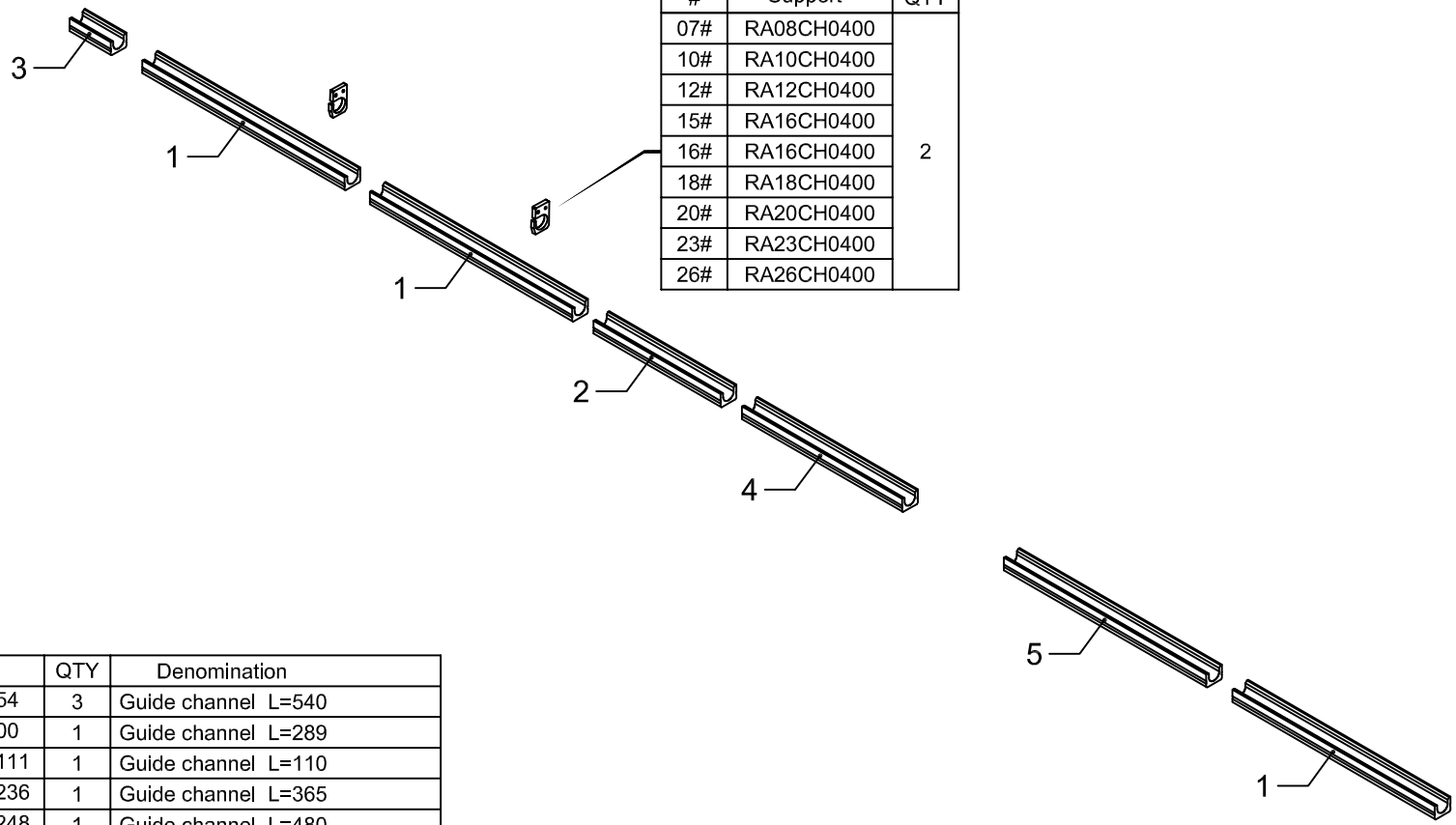


N.	Code	QTY		Denomination
		27	37	
1	RA26CH0127	1		Cover 2.7M L=1370
	RA26CH0137		2	Cover 3.7M L=1175
2	RA26CH0827	1		Ruubber rod 2.7M L=1350
	RA26CH0837		2	Ruubber rod 3.7M L=1200
3	RA26CH1700	7	10	Seat
4	RA26CH1800	3	4	Plate
5	RA26CH0900	5	6	Square nut
6	A11132300	1	2	Cylinder SDA 20x5
7	RA26CH1500	1	2	Cylinder support
8	RA26CH1600	1	2	Support
9	RA26CH1900	2	4	Spacer
10	RA26CH1400	1	2	Pusher
11	RA26CH0300	2		Arm
12	A11131600	1		Cylinder SDA-12x10-B
13	A12130300	4		Throttle valve M5-6
14	RA26CH0500	1		Cylinder support
15	RA26CH0700	1		Pusher
16	RA26CH2000	2		Ring
17	J310407	2		Limit switch



#	Support	QTY
07#	RA08CH0400	2
10#	RA10CH0400	
12#	RA12CH0400	
15#	RA16CH0400	
16#	RA16CH0400	
18#	RA18CH0400	
20#	RA20CH0400	
23#	RA23CH0400	
26#	RA26CH0400	

N.	Code	QTY	Denomination
1	P59_ _0154	5	Guide channel L=540
2	P64_ _1000	1	Guide channel L=289
3	RA_ _CH1111	1	Guide channel L=110
4	RA_ _CH1236	1	Guide channel L=365
	NOMINAL DIAMETER D. →		08 10 12 15 16 18 20 23 25
	⌀A		08 11 14 16 18 20 22 24 28
5	RA_ _CH1440	1	Guide channel L=440
6	RA_ _CH0037-XL	1	Guide channel-3.7M XL
	NOMINAL DIAMETER D. →		07 10 12 15 16 18 20 23 26
	⌀A		08 11 14 16 18 20 22 24 28



#	Support	QTY
07#	RA08CH0400	2
10#	RA10CH0400	
12#	RA12CH0400	
15#	RA16CH0400	
16#	RA16CH0400	
18#	RA18CH0400	
20#	RA20CH0400	
23#	RA23CH0400	
26#	RA26CH0400	

N.	Code	QTY	Denomination
1	P59_ _0154	3	Guide channel L=540
2	P64_ _1000	1	Guide channel L=289
3	RA_ _CH1111	1	Guide channel L=110
4	RA_ _CH1236	1	Guide channel L=365
5	RA_ _CH1248	1	Guide channel L=480
	NOMINAL DIAMETER D. →		08 10 12 15 16 18 20 23 25
	ϕA		08 11 14 16 18 20 22 24 28
6	RA_ _CH0027-XL	1	Guide channel-2.7M XL
	NOMINAL DIAMETER D. →		07 10 12 15 16 18 20 23 26
	ϕA		08 11 14 16 18 20 22 24 28

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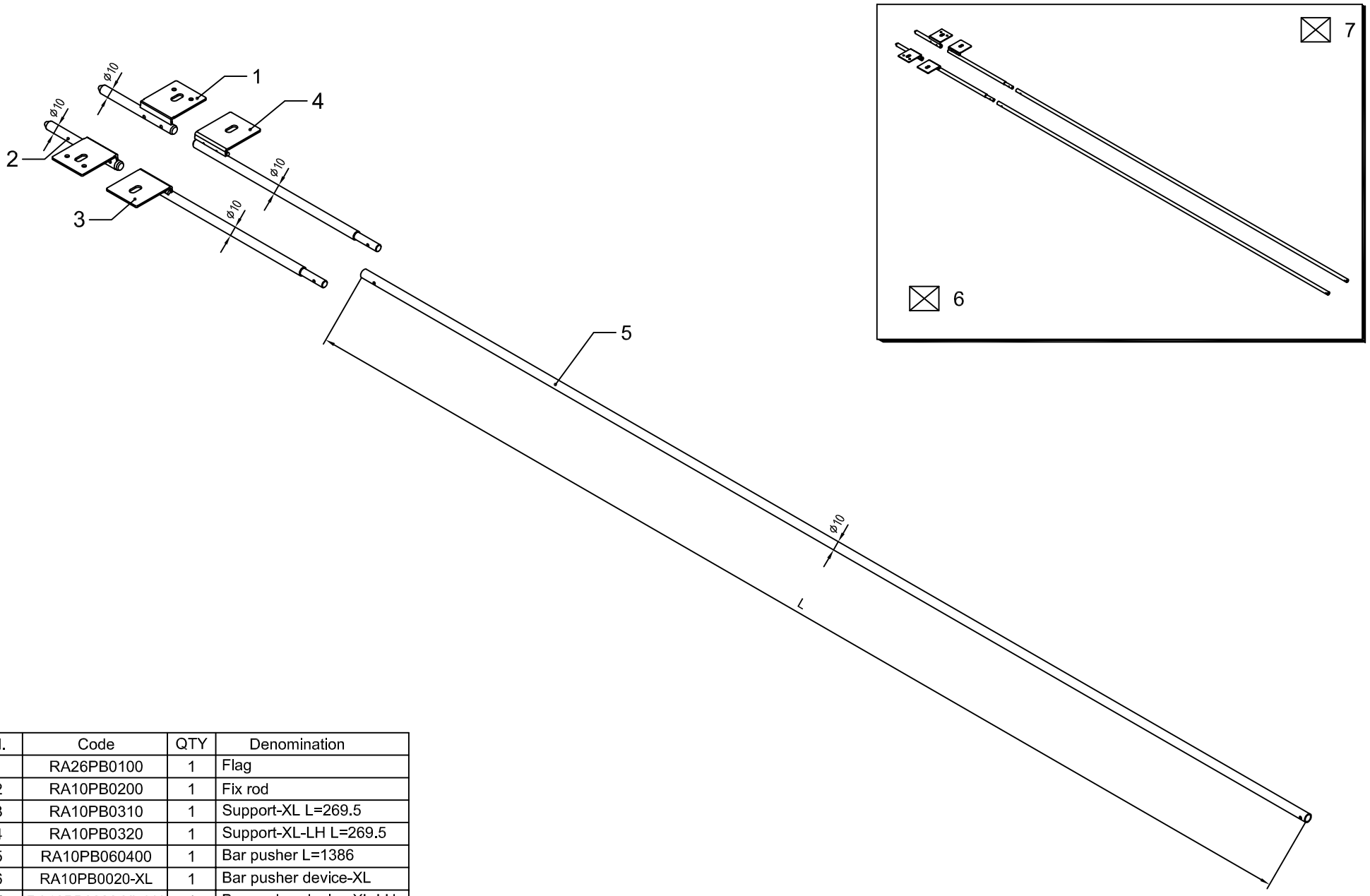
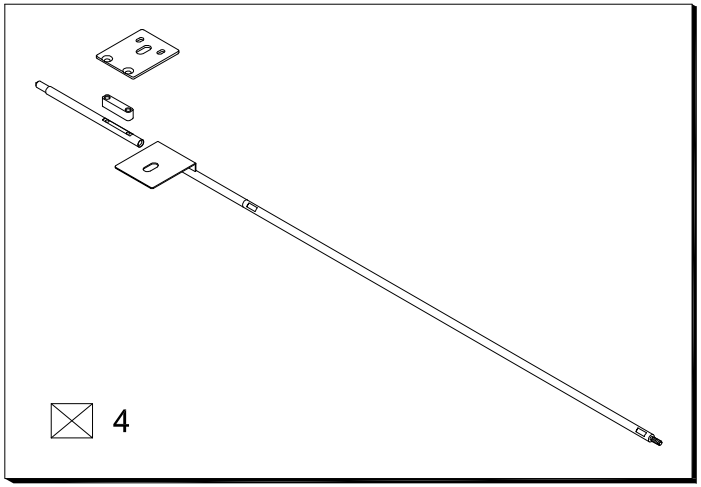
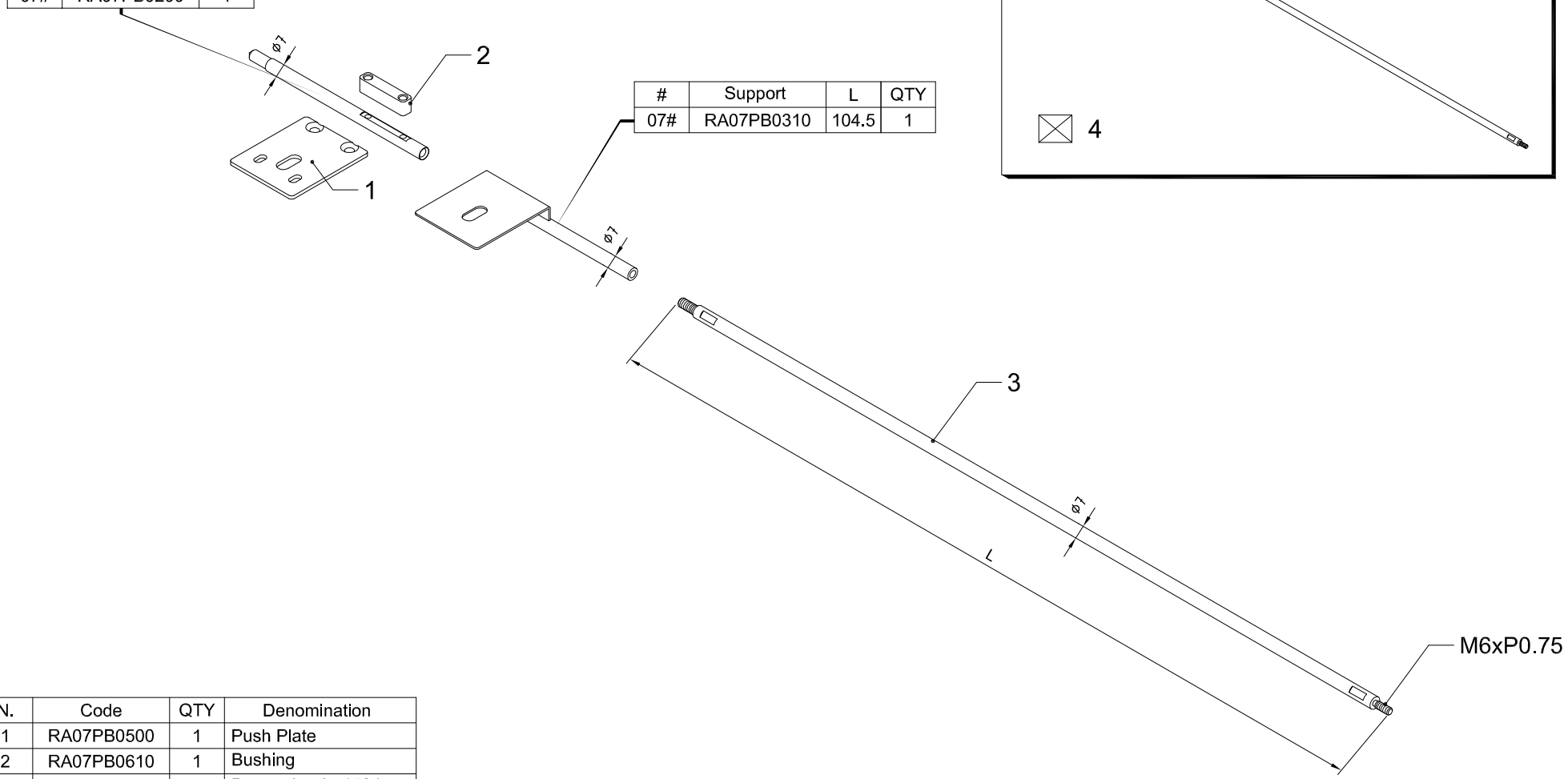


N.	Code	QTY	Denomination
1	RA26PB0100	1	Flag
2	RA10PB0200	1	Fix rod
3	RA10PB0310	1	Support-XL L=269.5
4	RA10PB0320	1	Support-XL-LH L=269.5
5	RA10PB060400	1	Bar pusher L=1386
6	RA10PB0020-XL	1	Bar pusher device-XL
7	RA10PB0020-XL-LH	1	Bar pusher device-XL-LH

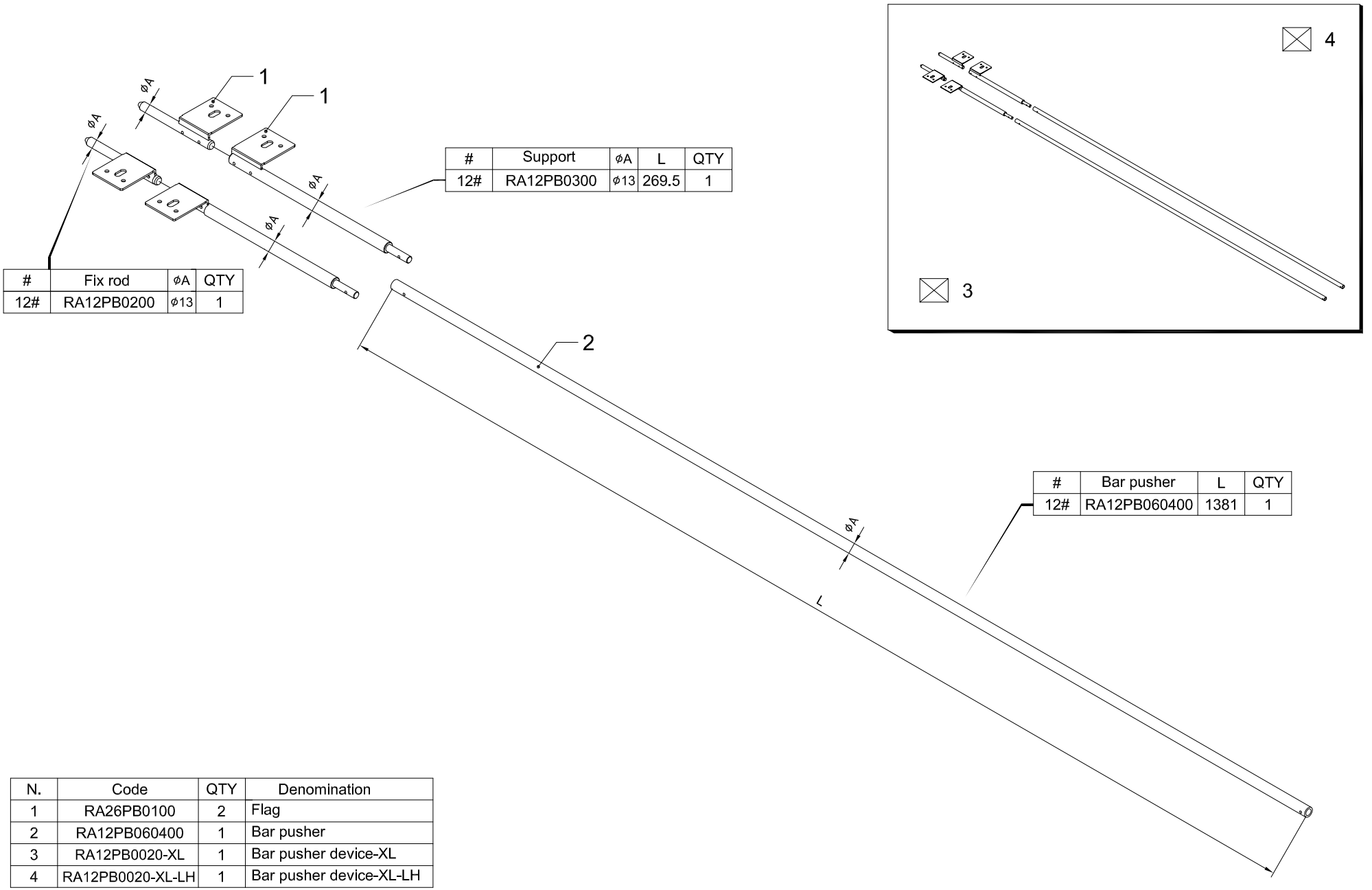
#	Fix rod	QTY
07#	RA07PB0200	1

#	Support	L	QTY
07#	RA07PB0310	104.5	1





N.	Code	QTY	Denomination
1	RA07PB0500	1	Push Plate
2	RA07PB0610	1	Bushing
3	P54080104	1	Bar pusher L=1534
4	RA07PB0020-XL	1	Bar pusher device-XL



#	Support	ϕA	L	QTY
12#	RA12PB0300	ϕ13	269.5	1

#	Fix rod	ϕA	QTY
12#	RA12PB0200	ϕ13	1

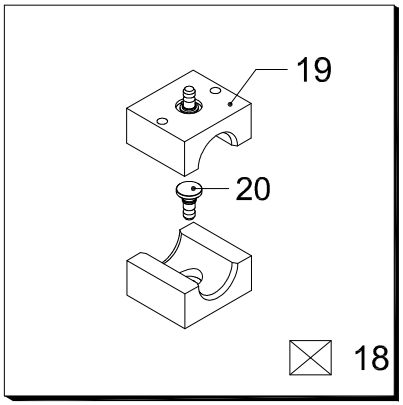
#	Bar pusher	L	QTY
12#	RA12PB060400	1381	1

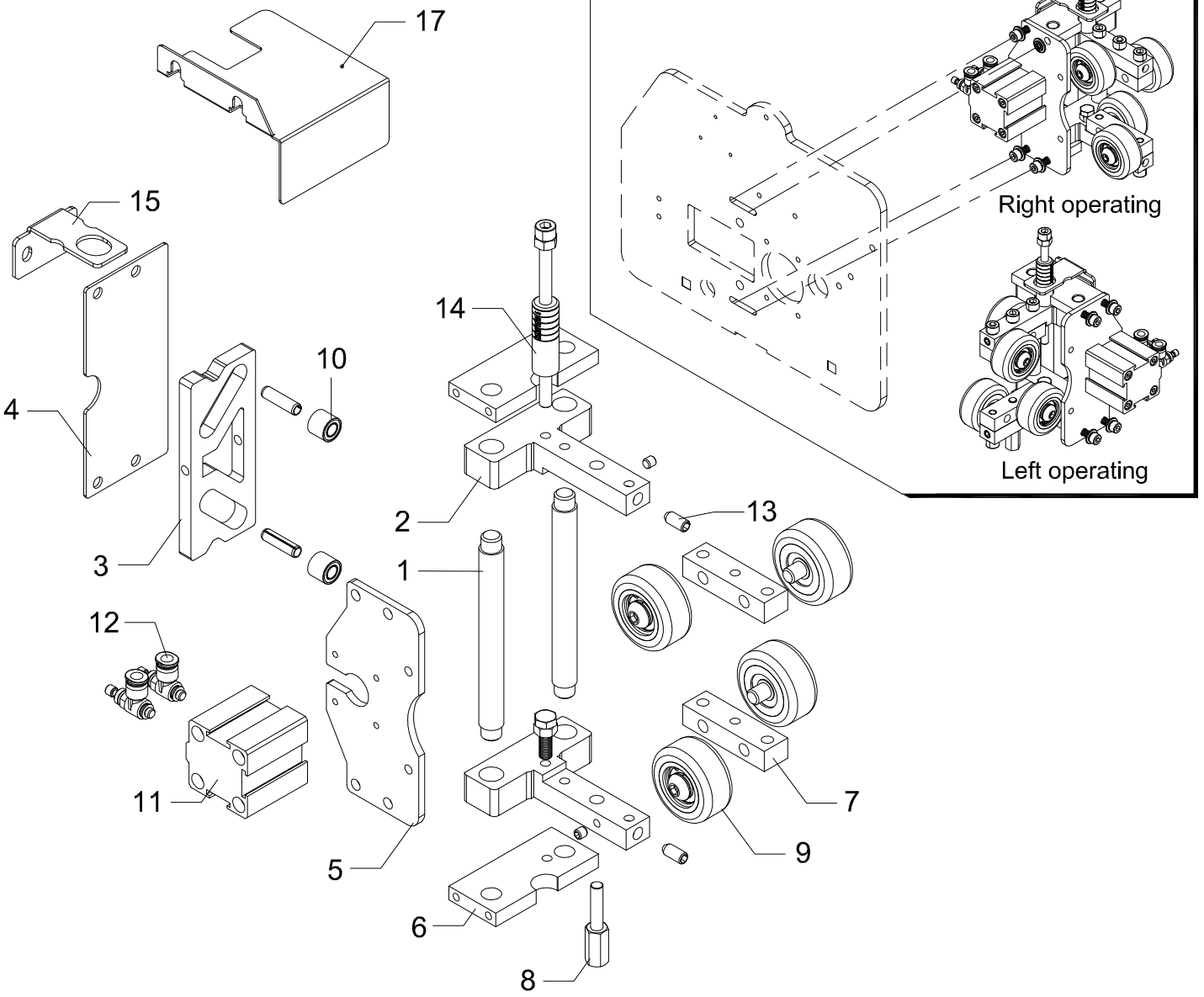
N.	Code	QTY	Denomination
1	RA26PB0100	2	Flag
2	RA12PB060400	1	Bar pusher
3	RA12PB0020-XL	1	Bar pusher device-XL
4	RA12PB0020-XL-LH	1	Bar pusher device-XL-LH

RANGER 112

#12 TYPE BAR PUSHER DEVICE XL

Tab. 072 3

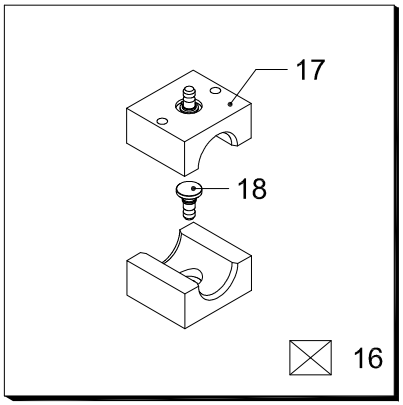


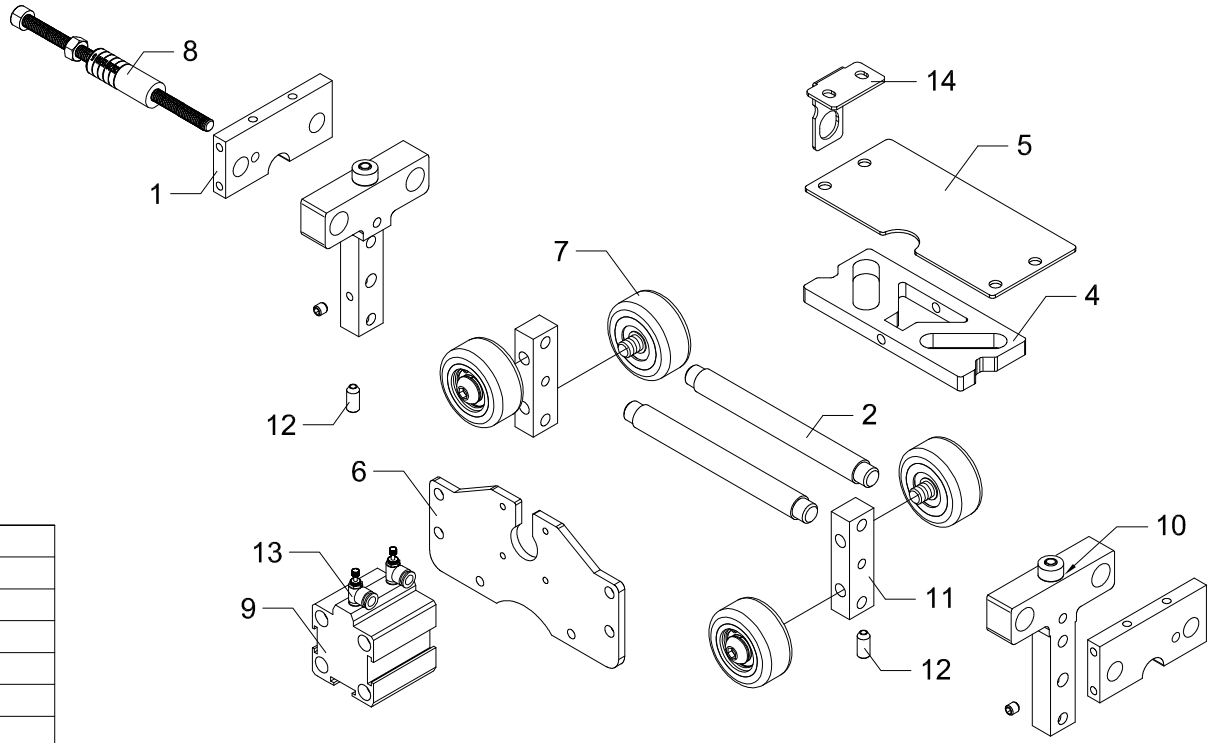


N.	Code	QTY	Denomination
1	P85200100	2	Arbor
2	P85200200	2	Anchor
3	P85200300	1	Plate
4	P85200500	1	Plate
5	P85200600	1	Plate
6	P85200700	2	Plate
7	P85200900	2	Anchor
8	P85201300	1	Arbor
9	HP8127000F	4	Spacer set
10	P85202300	2	Roller
11	A11130100	1	Cylinder SDA25x20
12	A12130300	2	Flow regulator M5,ϕ6
13	G55120900	2	Ball BP-06L
14	P85201350	1	Scale shaft
15	P85201360	1	Indicator plate
16	RA26BU000A	1	First anti-vibration device (Right operating)
	RA26BU001A	1	First anti-vibration device (Left operating)
17	RA26BU0100	1	Cover (Right operating)
	RA26BU0110	1	Cover (Left operating)
18	P852010_ _A	1	Anti-vibration bushing set
19	P852010_ _	2	Bushing block
NOMINAL DIAMETER D. →			02 08 10 12 14 16 18 20 22 24 26 28
ϕ			03 09 11 13 15 17 19 21 23 25 27 29
20	P85200800	2	Arbor

RANGER 112

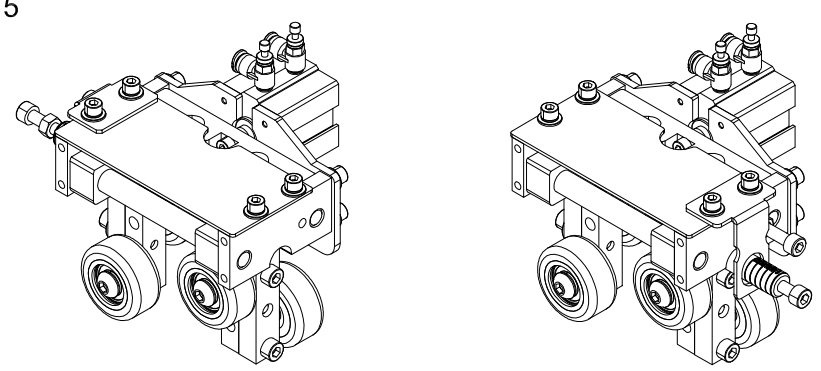
FIRST ANIT-VIBRATION DEVICE (INSTALL ANTI-VIBRATION BUSHING SET)





N.	Code	QTY	Denomination
1	P85200700	2	Plate
2	P85200100	2	Arbor
3	P85200200	2	Anchor
4	P85200300	1	Plate
5	P85200500	1	Plate
6	P85200600	1	Plate
7	HP8127000F	4	Spacer set
8	P85201350	1	Scale shaft
9	A11130100	1	Cylinder SDA 25x20
10	P85202300	2	Roller
11	P85200900	2	Anchor
12	G55120900	2	Ball BP-06L
13	A12130300	2	Flow regulator M5,ø6
14	P85201360	1	Indicator plate
15	HP8127002A	1	Anti-vibration device (Right operating)
	HP8127001A	1	Anti-vibration device (Left operating)
16	P852010_ _A	1	Bushing set
17	P852010_ _	2	Bushing block
	NOMINAL DIAMETER D.		02 08 10 12 14 16 18 20 22 24 26 28 ø 03 09 11 13 15 17 19 21 23 25 27 29
18	P85200800	2	Arbor

15

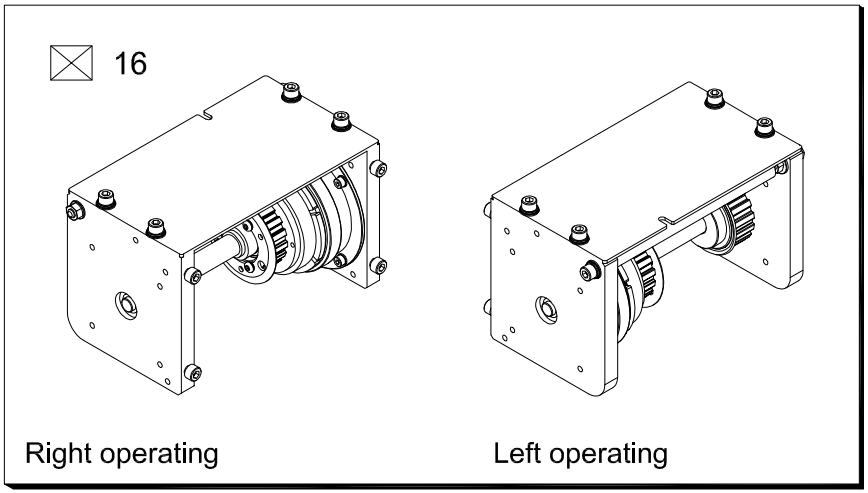


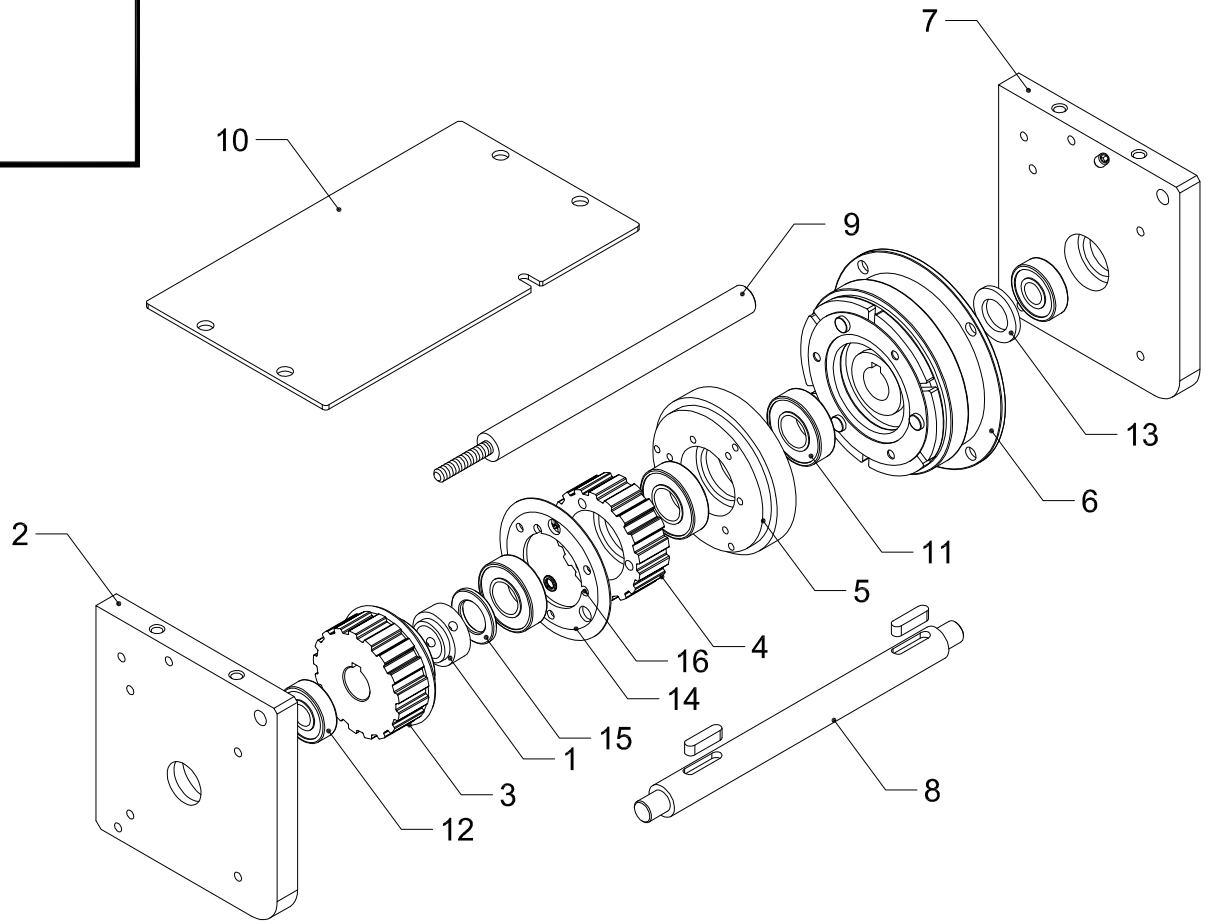
Right operating

Left operating

RANGER 112

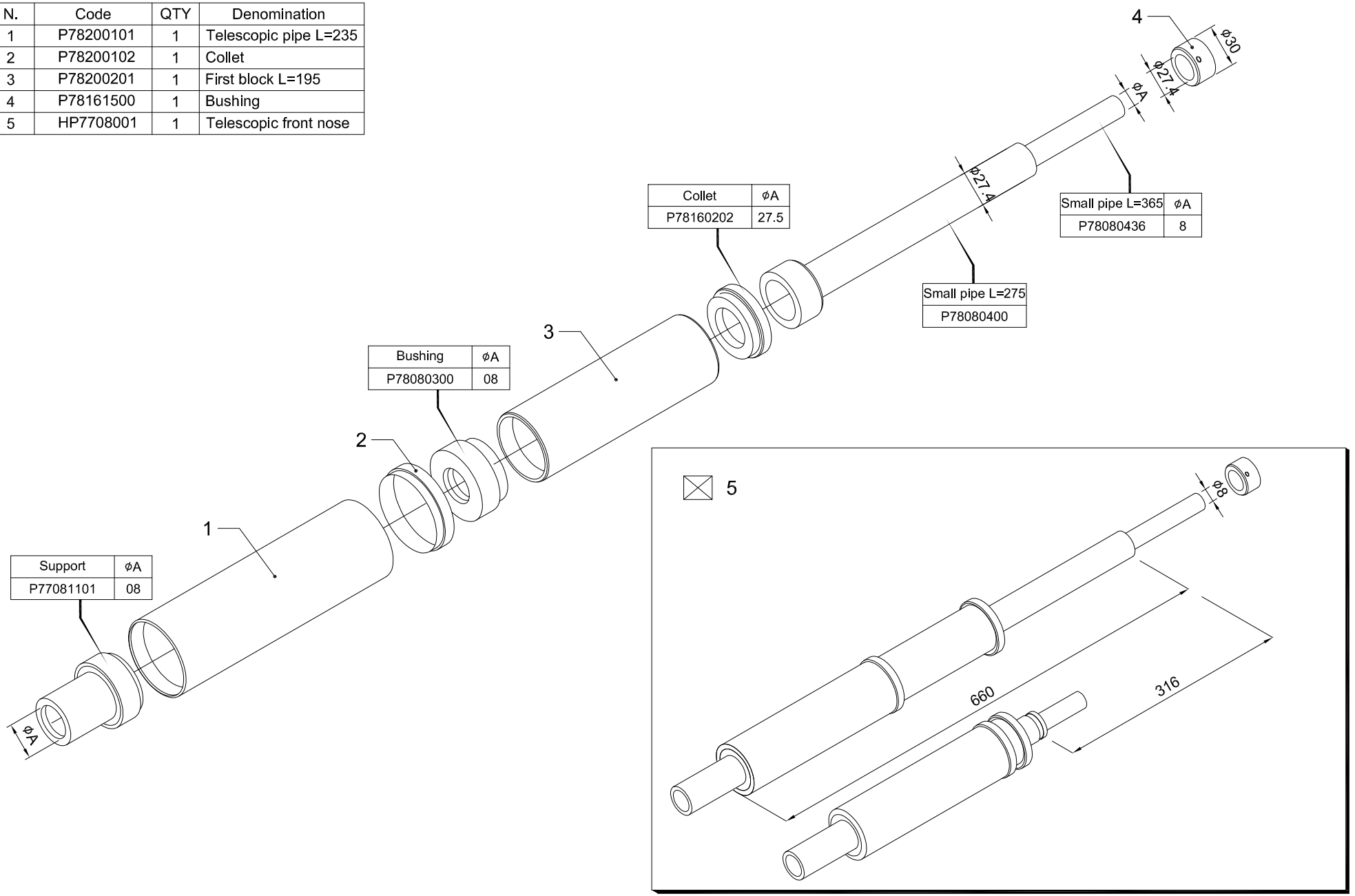
MOVEABLE ANTI-VIBRATION DEVICE





N.	Code	QTY	Denomination
1	RA26DR1200	1	Fixing ring
2	RA26DR5100	1	Plate (L)
3	P49201700	1	Pulley
4	P49203100	1	Pulley L 17T
5	RA26DR1010	1	Bearing seat
6	RA26DR2000	1	Clutch
7	RA26DR5200	1	Plate (R)
8	RA26DR5300	1	Shaft
9	RA26DR5500	1	Connector rod
10	RA26DR5000	1	Plate
11	B6002ZZ	3	Bearing 6002ZZ
12	B6000ZZ	2	Bearing 6000ZZ
13	RA26DR1910	1	Bushing
14	607460402	1	Plate
15	RA26MA2600	1	Bushing
16	ZS160425C	3	Hexangular screw
17	RA26DR001B	1	Sychronization (Right operating)
	RA26DR002B	1	Sychronization (Left operating)

N.	Code	QTY	Denomination
1	P78200101	1	Telescopic pipe L=235
2	P78200102	1	Collet
3	P78200201	1	First block L=195
4	P78161500	1	Bushing
5	HP7708001	1	Telescopic front nose

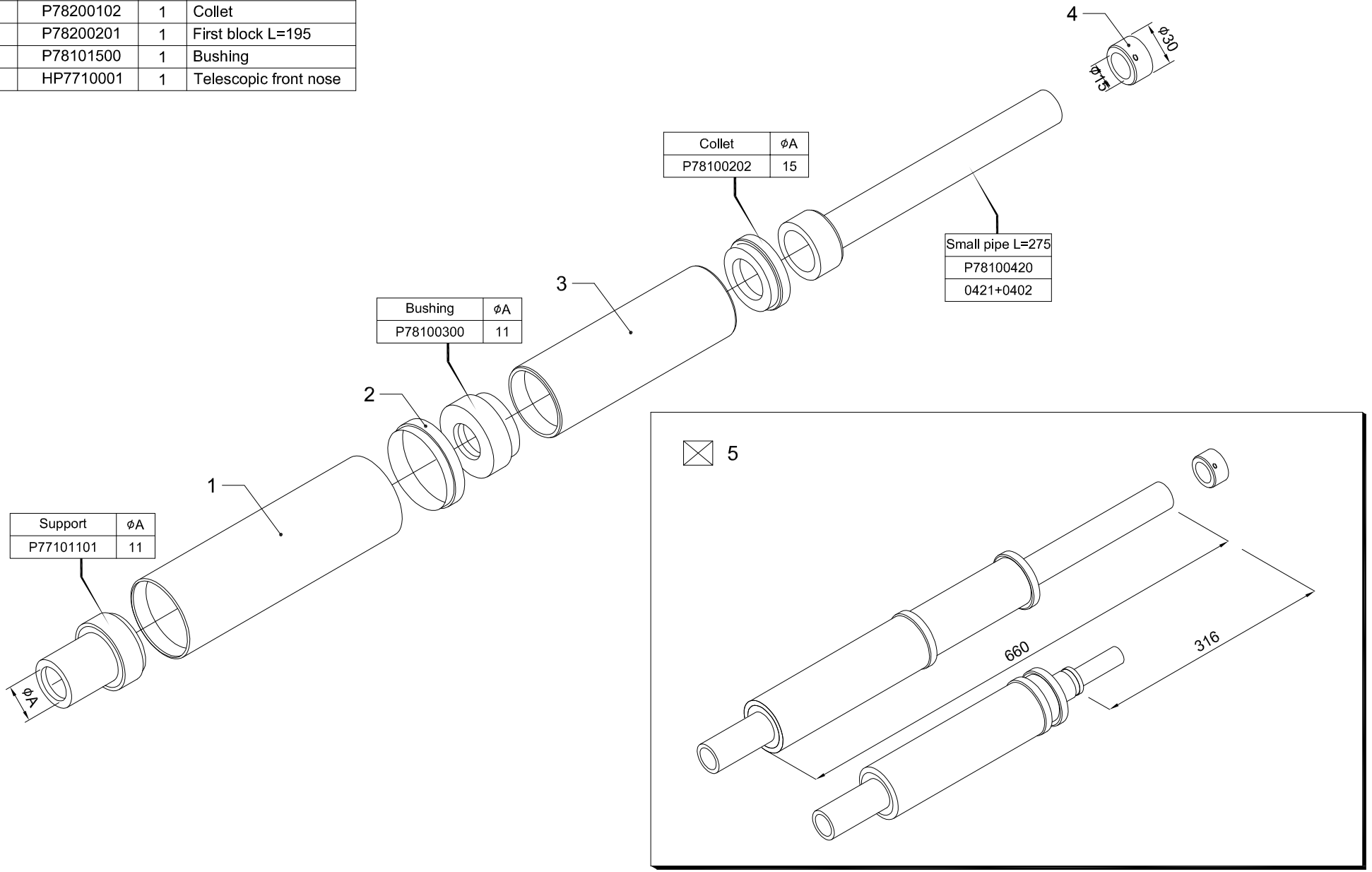


RANGER 112

316MM TELESCOPIC NOSE

Tab. PTEL3200008 2

N.	Code	QTY	Denomination
1	P78200101	1	Telescopic pipe L=235
2	P78200102	1	Collet
3	P78200201	1	First block L=195
4	P78101500	1	Bushing
5	HP7710001	1	Telescopic front nose



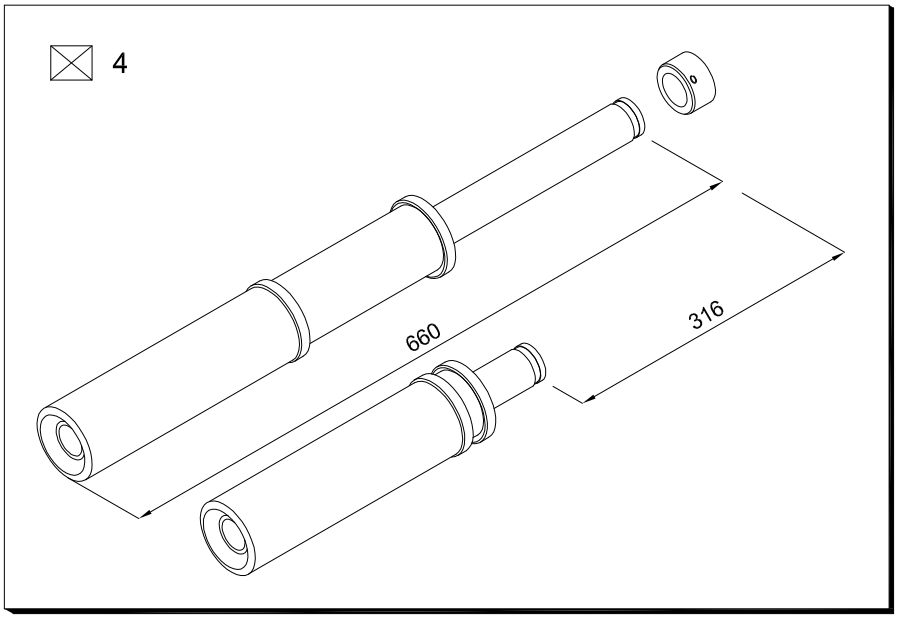
RANGER 112

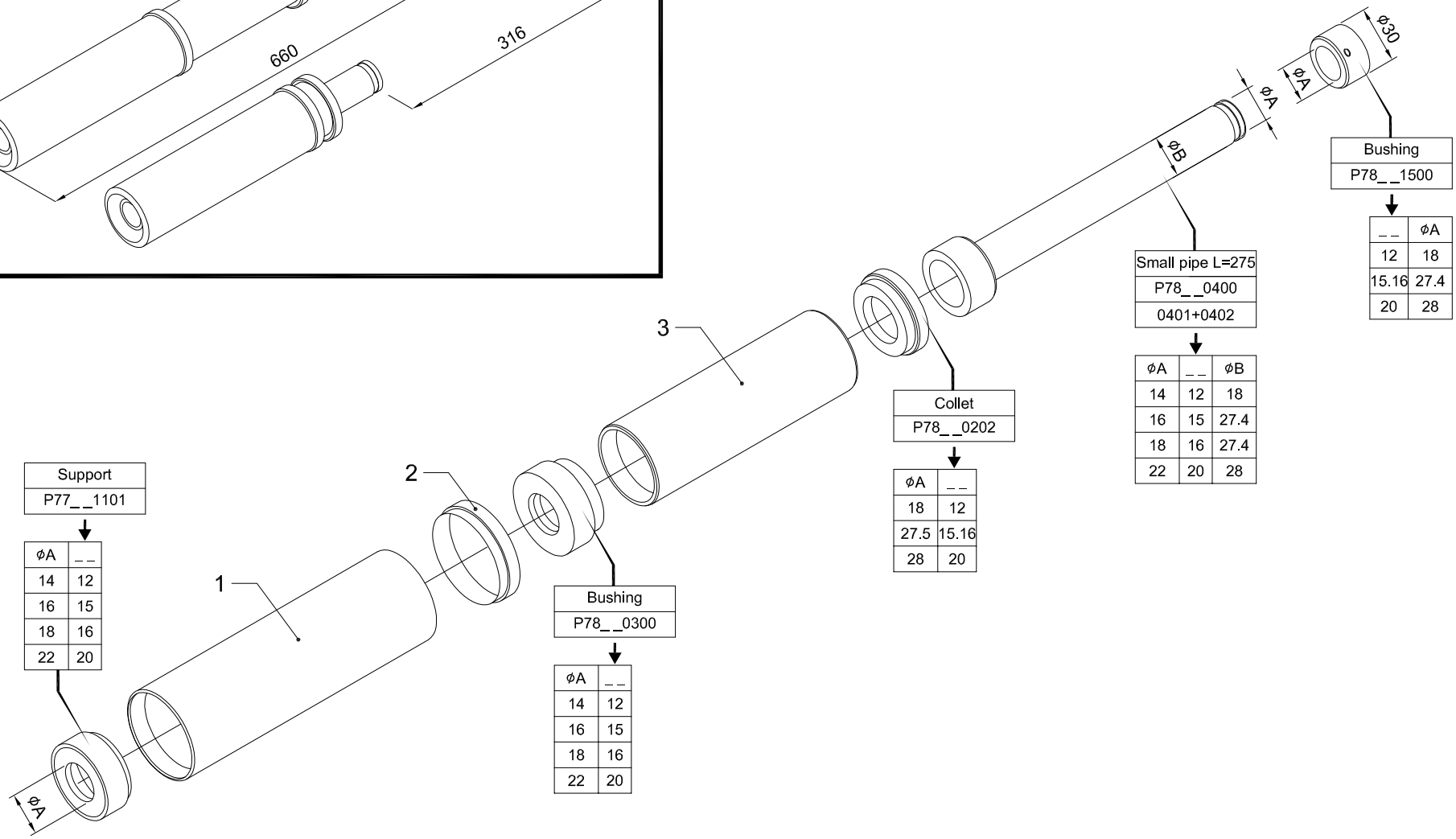
316MM TELESCOPIC NOSE

Tab. PTEL3200010 2

N.	Code	QTY	Denomination
1	P78200101	1	Telescopic pipe L=235
2	P78200102	1	Collet
3	P78200201	1	First block L=195
4	HP77__001	1	Telescopic front nose

NOMINAL DIAMETER D. → 12 15 16 20
ϕA 14 16 18 22





Bushing
P78__1500

__	ϕA
12	18
15.16	27.4
20	28

Small pipe L=275
P78__0400
0401+0402

ϕA	__	ϕB
14	12	18
16	15	27.4
18	16	27.4
22	20	28

Collet
P78__0202

ϕA	__
18	12
27.5	15.16
28	20

Bushing
P78__0300

ϕA	__
14	12
16	15
18	16
22	20

Support
P77__1101

ϕA	__
14	12
16	15
18	16
22	20

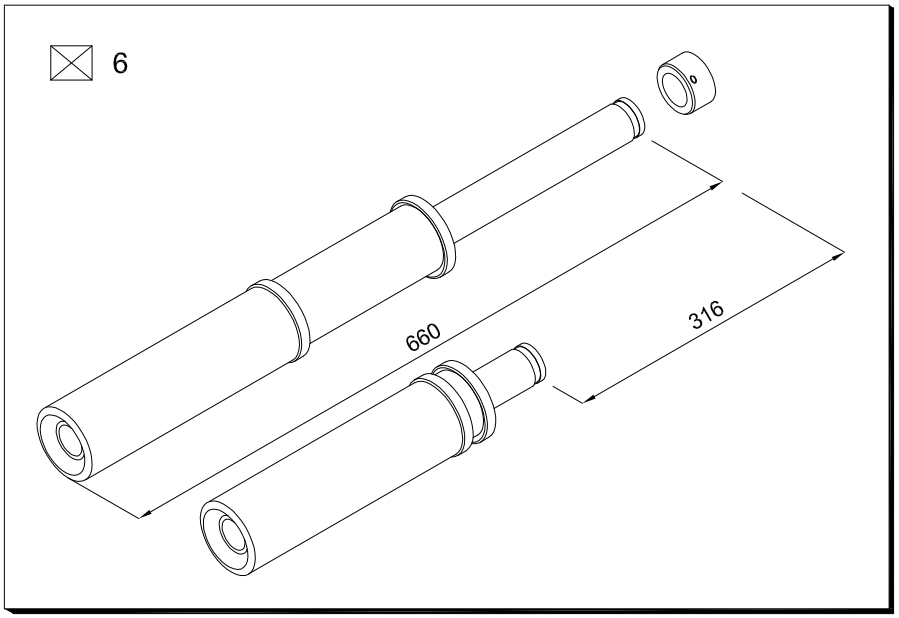
14
16
18
22

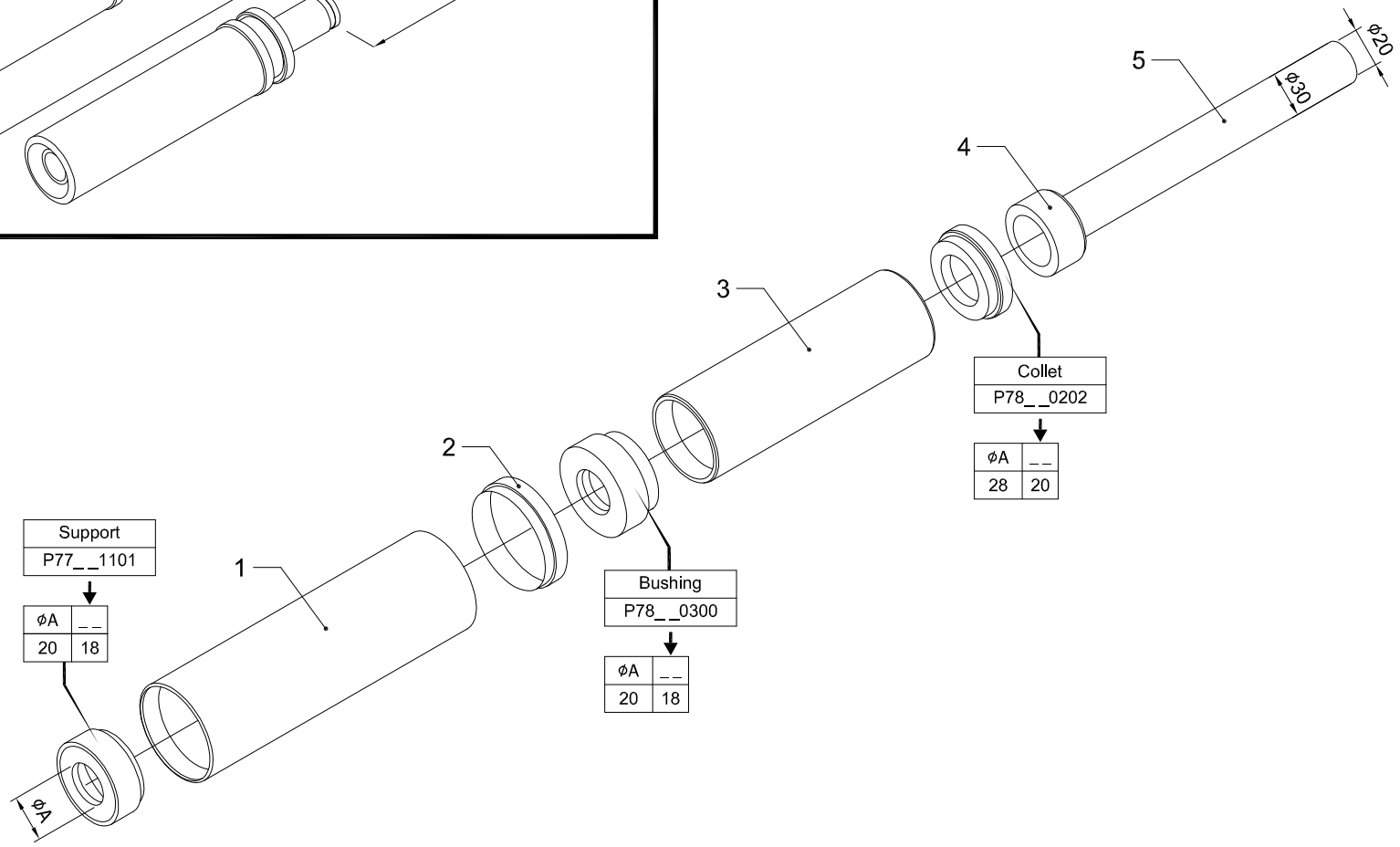
RANGER 112

316MM TELESCOPIC NOSE

Tab. PTEL32000__ 2

N.	Code	QTY	Denomination
1	P78200101	1	Telescopic pipe L=235
2	P78200102	1	Collet
3	P78200201	1	First block L=195
4	P78160402	1	Ring
5	P78180401	1	Sleeve18 L=259
6	HP7718001	1	Telescopic front nose

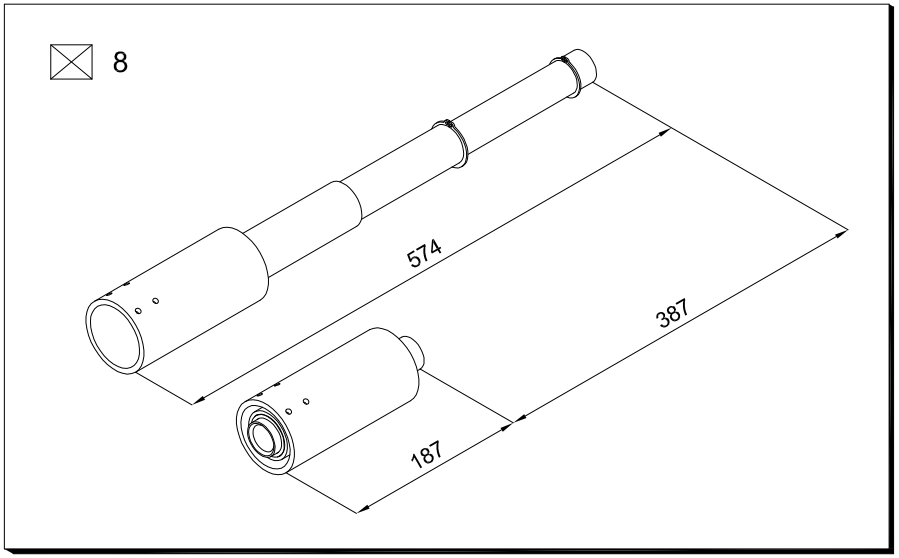




RANGER 112

316MM TELESCOPIC NOSE

Tab. PTEL3200020 2



N.	Code	QTY	Denomination
1	MEP20061	1	360MM TELE NOSE 1ST STAGE TUBE
2	MEP20053	1	360MM TELE NOSE 2ND STAGE TUBE
3	MEP20055	1	360MM TELE NOSE 3RD STAGE TUBE
4	ZS07S035	1	C RING-S35 (SHAFT)
5	ZS07S027	1	C RING-S27 (SHAFT)
6	MEP2005817	1	360MM TELE NOSE 4TH STAGE TUBE
7	P78161500	1	BUSHING
8	PTEL32021__	1	360MM TELE NOSE-MINUTEMAN-TSUGAMI SS20

NOMINAL DIAMETER D. → 8 11 14

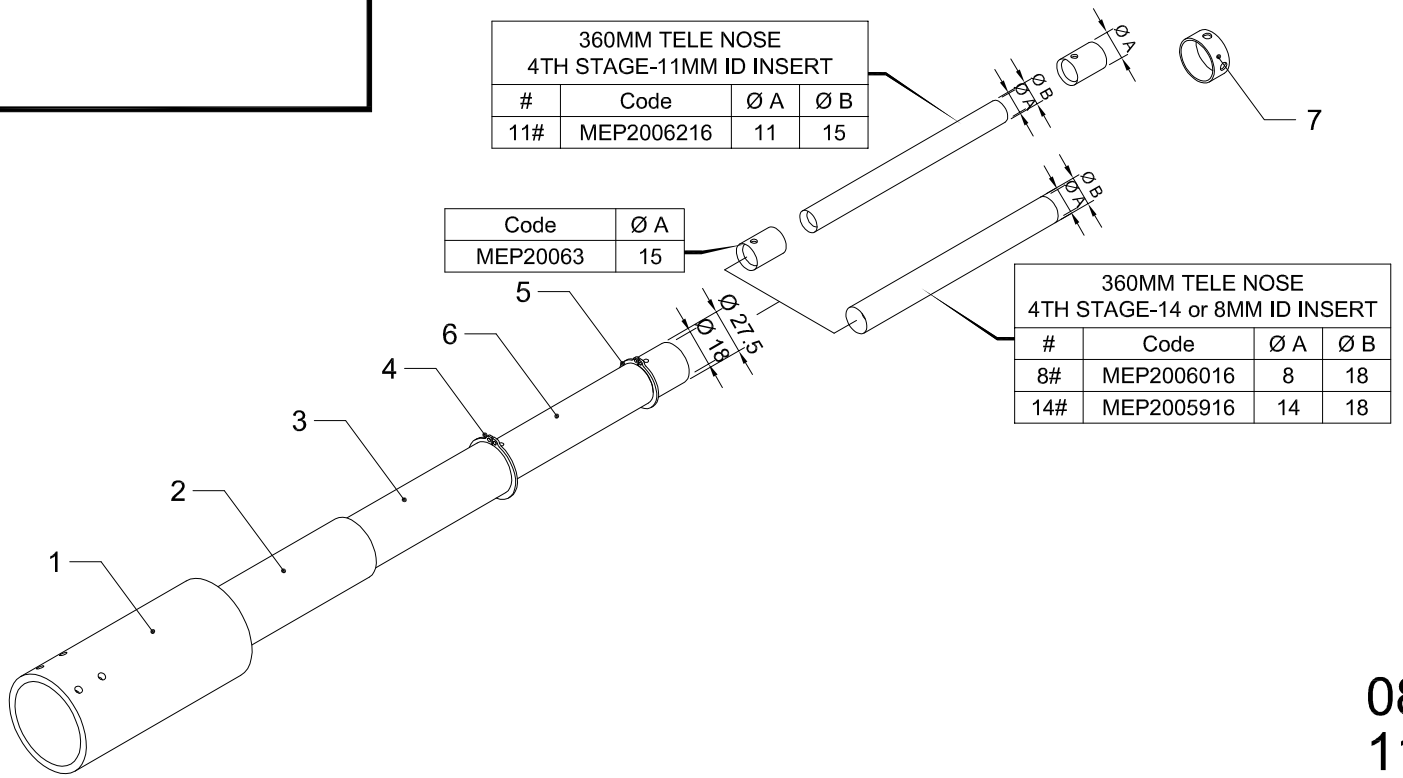
360MM TELE NOSE
4TH STAGE-11MM ID INSERT

#	Code	Ø A	Ø B
11#	MEP2006216	11	15

Code	Ø A
MEP20063	15

360MM TELE NOSE
4TH STAGE-14 or 8MM ID INSERT

#	Code	Ø A	Ø B
8#	MEP2006016	8	18
14#	MEP2005916	14	18

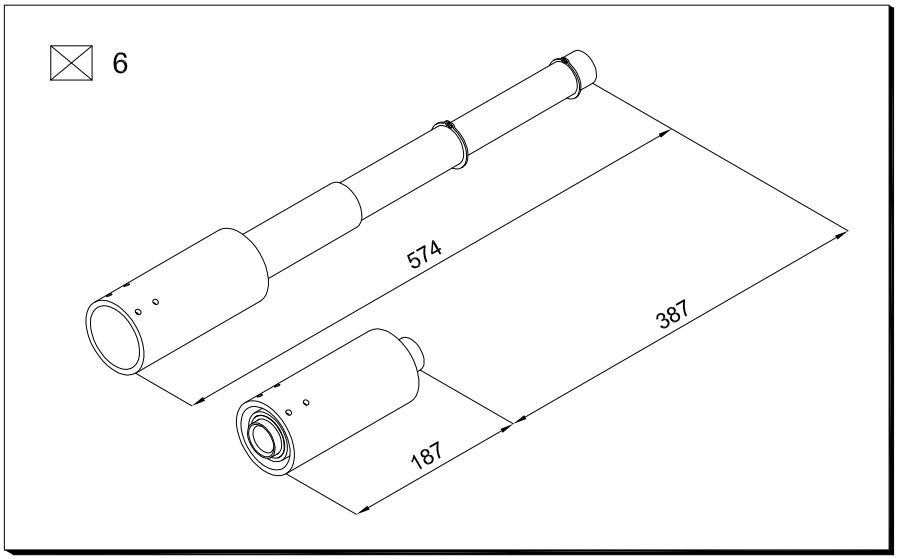


08
11
14

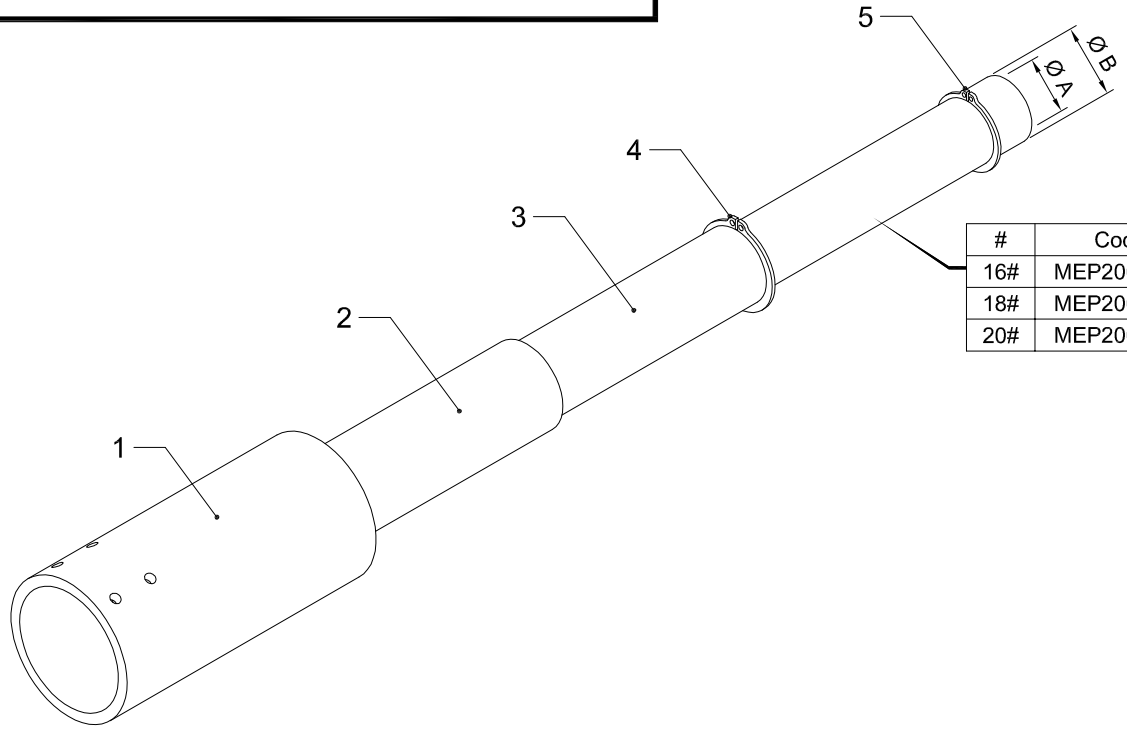
RANGER 112

400MM TELE NOSE L=574mm

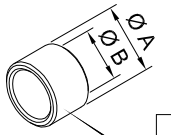
Tab. PTEL32021__ 2



N.	Code	QTY	Denomination
1	MEP20061	1	360MM TELE NOSE 1ST STAGE TUBE
2	MEP20053	1	360MM TELE NOSE 2ND STAGE TUBE
3	MEP20054	1	360MM TELE NOSE 3RD STAGE TUBE
4	ZS07S035	1	C RING-S35 (SHAFT)
5	ZS07S030	1	C RING-S30 (SHAFT)
6	PTEL32021__	1	360MM TELE NOSE-MINUTEMAN-TSUGAMI SS20
	NOMINAL DIAMETER D. →		18 20 22



#	Code	Ø A	Ø B
16#	MEP2005617	24	30
18#	MEP2005617	24	30
20#	MEP2005617	24	30



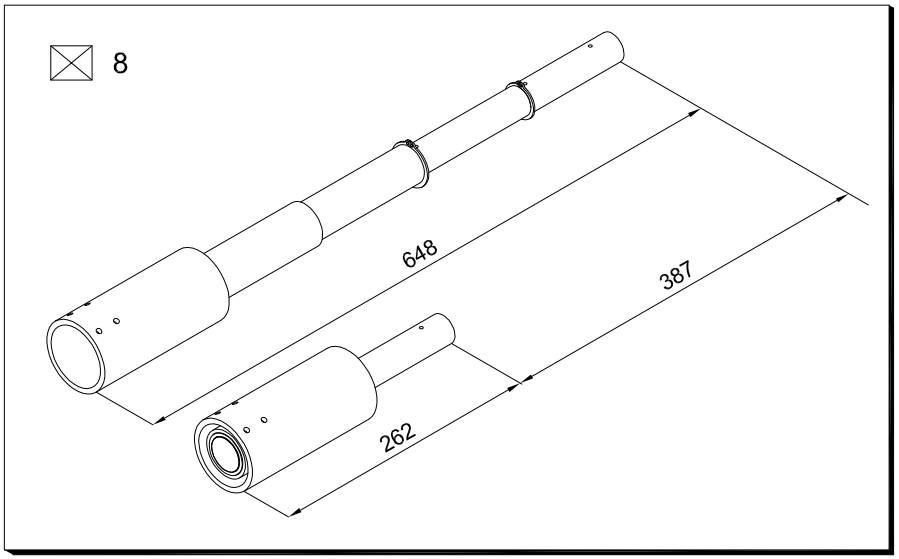
#	Code	Ø A	Ø B
16#	P82161600	30	18
18#	P82181600	30	20
20#	P82201600	30	22

18
20
22

RANGER 112

400MM TELE NOSE L=574mm

Tab. PTEL32021__ 2



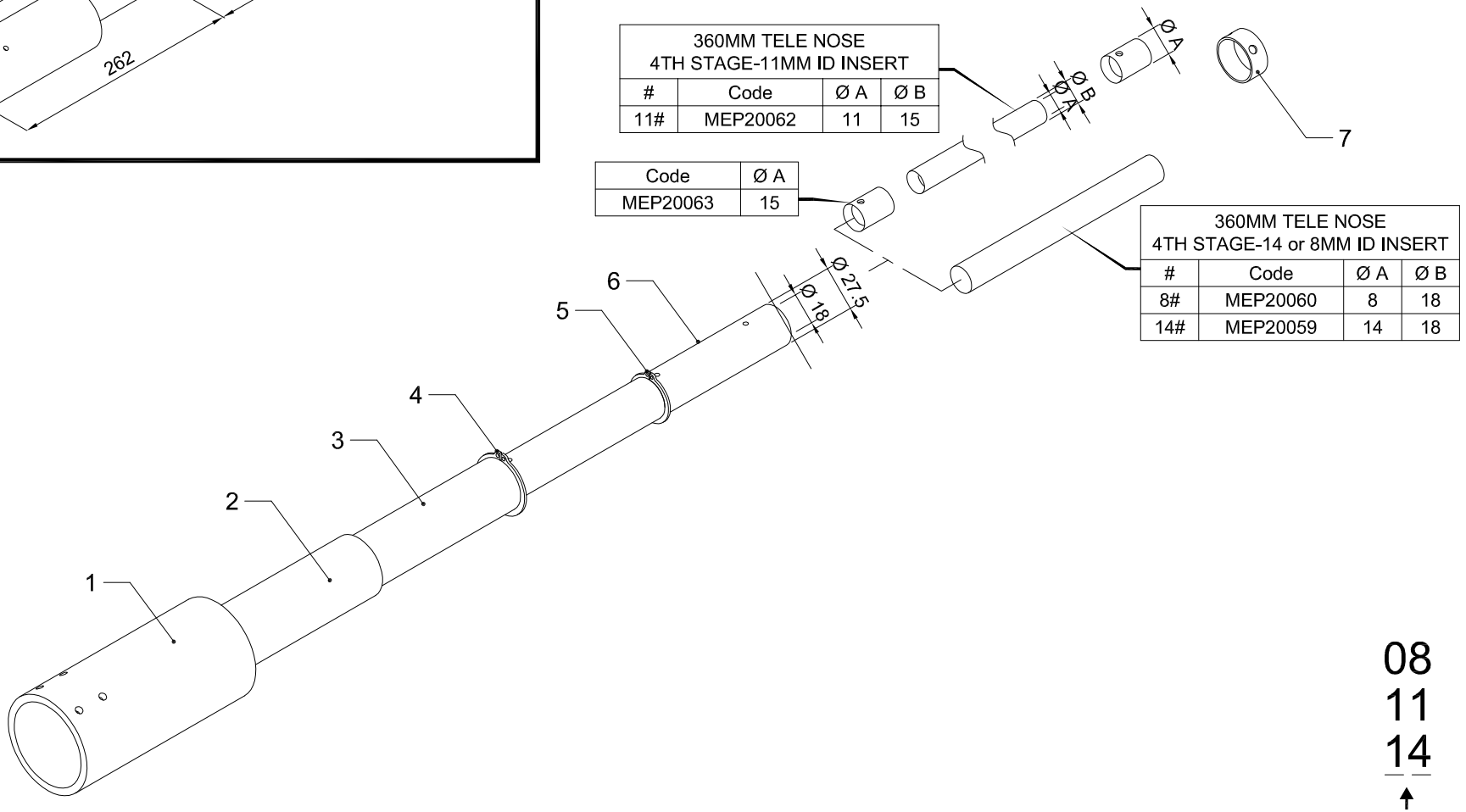
N.	Code	QTY	Denomination
1	MEP20061	1	360MM TELE NOSE 1ST STAGE TUBE
2	MEP20053	1	360MM TELE NOSE 2ND STAGE TUBE
3	MEP20055	1	360MM TELE NOSE 3RD STAGE TUBE
4	ZS07S035	1	C RING-S35 (SHAFT)
5	ZS07S027	1	C RING-S27 (SHAFT)
6	MEP20058	1	360MM TELE NOSE 4TH STAGE TUBE
7	P78161500	1	BUSHING
8	PTEL32022__	1	360MM TELE NOSE-MINUTEMAN-TSUGAMI SS20

NOMINAL DIAMETER D. → 8 11 14

360MM TELE NOSE 4TH STAGE-11MM ID INSERT			
#	Code	Ø A	Ø B
11#	MEP20062	11	15

Code	Ø A
MEP20063	15

360MM TELE NOSE 4TH STAGE-14 or 8MM ID INSERT			
#	Code	Ø A	Ø B
8#	MEP20060	8	18
14#	MEP20059	14	18

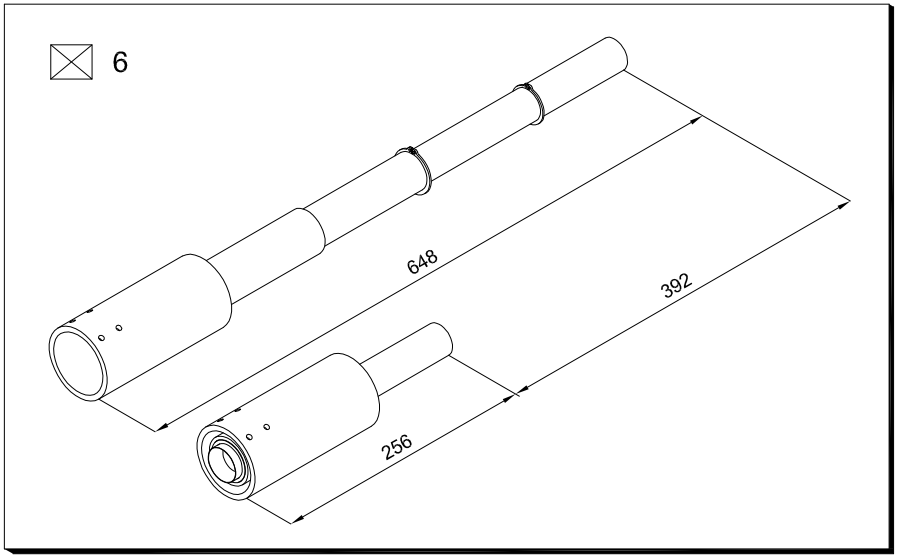


08
11
14

RANGER 112

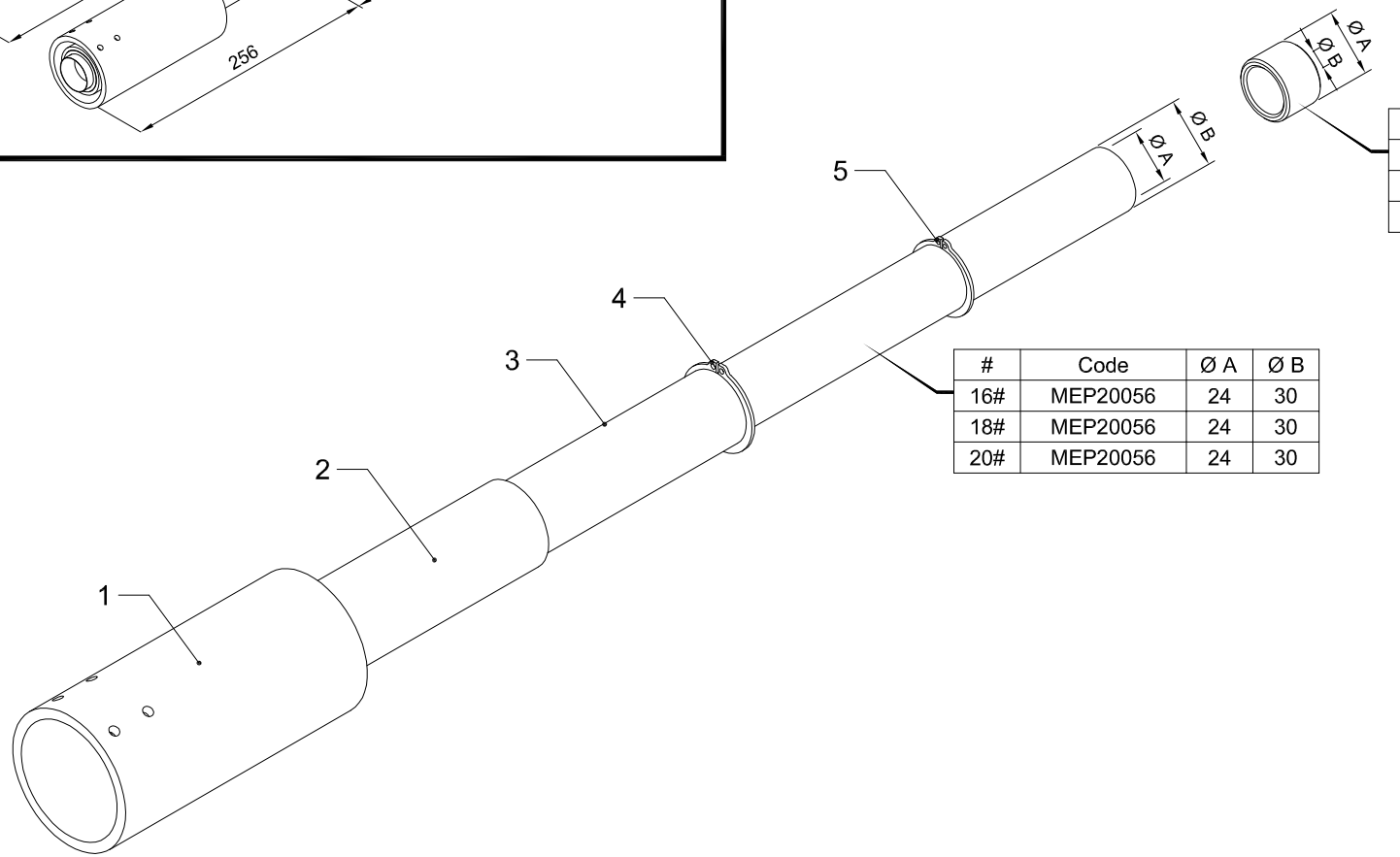
400MM TELE NOSE L=648mm

Tab. PTEL32022__ 2



N.	Code	QTY	Denomination
1	MEP20061	1	360MM TELE NOSE 1ST STAGE TUBE
2	MEP20053	1	360MM TELE NOSE 2ND STAGE TUBE
3	MEP20054	1	360MM TELE NOSE 3RD STAGE TUBE
4	ZS07S035	1	C RING-S35 (SHAFT)
5	ZS07S030	1	C RING-S30 (SHAFT)
6	PTEL32022__	1	360MM TELE NOSE-MINUTEMAN-TSUGAMI SS20

NOMINAL DIAMETER D. → 18 20 22



#	Code	Ø A	Ø B
16#	MEP20056	24	30
18#	MEP20056	24	30
20#	MEP20056	24	30

#	Code	Ø A	Ø B
16#	P82161600	30	18
18#	P82181600	30	20
20#	P82201600	30	22

18
20
22

RANGER 112

400MM TELE NOSE L=648mm

Tab. PTEL32022__ 2

EDGE TECHNOLOGIES

Ranger 112

OPERATIONS MANUAL

Version 3

Technical data subject to change without notice

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