

—K

—

—

—



1		1
2		6
3		7
4		9
5		10
6		10
7		1



1.

1.1

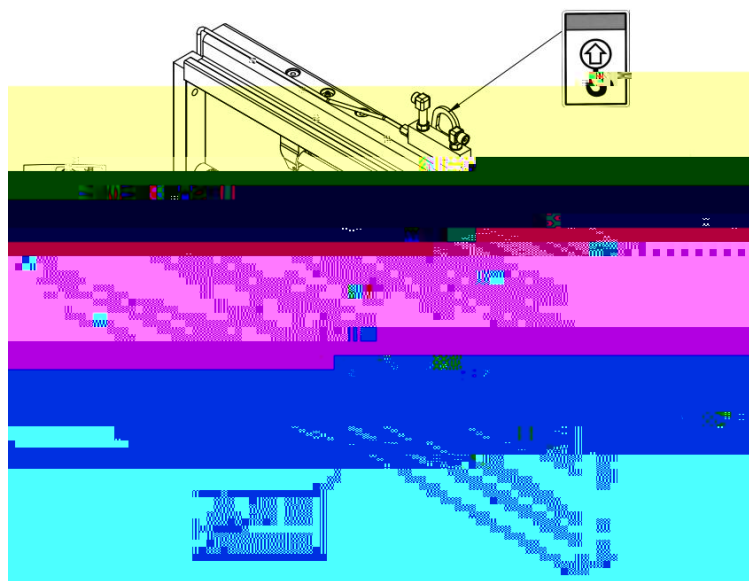
“ ” “ ” “ ”

⚠ _____

⚠ _____

⚠ _____

⚠





$\kappa \quad \Delta \quad \ddot{U} \quad \omega$

1.2

—

—

—



$\kappa \quad \Delta \quad \ddot{U} \quad \omega$





K Δ Ũ ω

_____ / _____

1.3.4

WFE 9 9
@õ ,D QH™
WFE 9 9



	K	Δ	$\ddot{U}$	ω

	ISO4762	ISO4014	ISO4032
	8.8	10.9	12.9
M10	45Nm	66Nm	77Nm
M12	77Nm	115Nm	135Nm
M16	190Nm	280Nm	330Nm
M20	385Nm	550Nm	640Nm

4



$K \quad \Delta \quad \ddot{U} \quad \omega$

2.

2.1

14MPa

16 Mpa

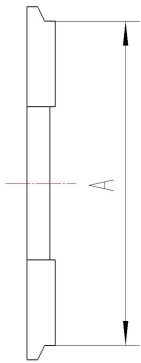
2.2

①

②



			K	Δ	Ü	ω
2.4	ISO	2328				ITA



	A		B		C	
	380	381	15	16	15.2	16.8
	474.5	476	20.5	21.5	18.2	19.8
	595.5	597	24.5	25.5	18.2	19.8

1

2.5

3.

3.1

(1) 4

(2) 140N.m



(3) M10

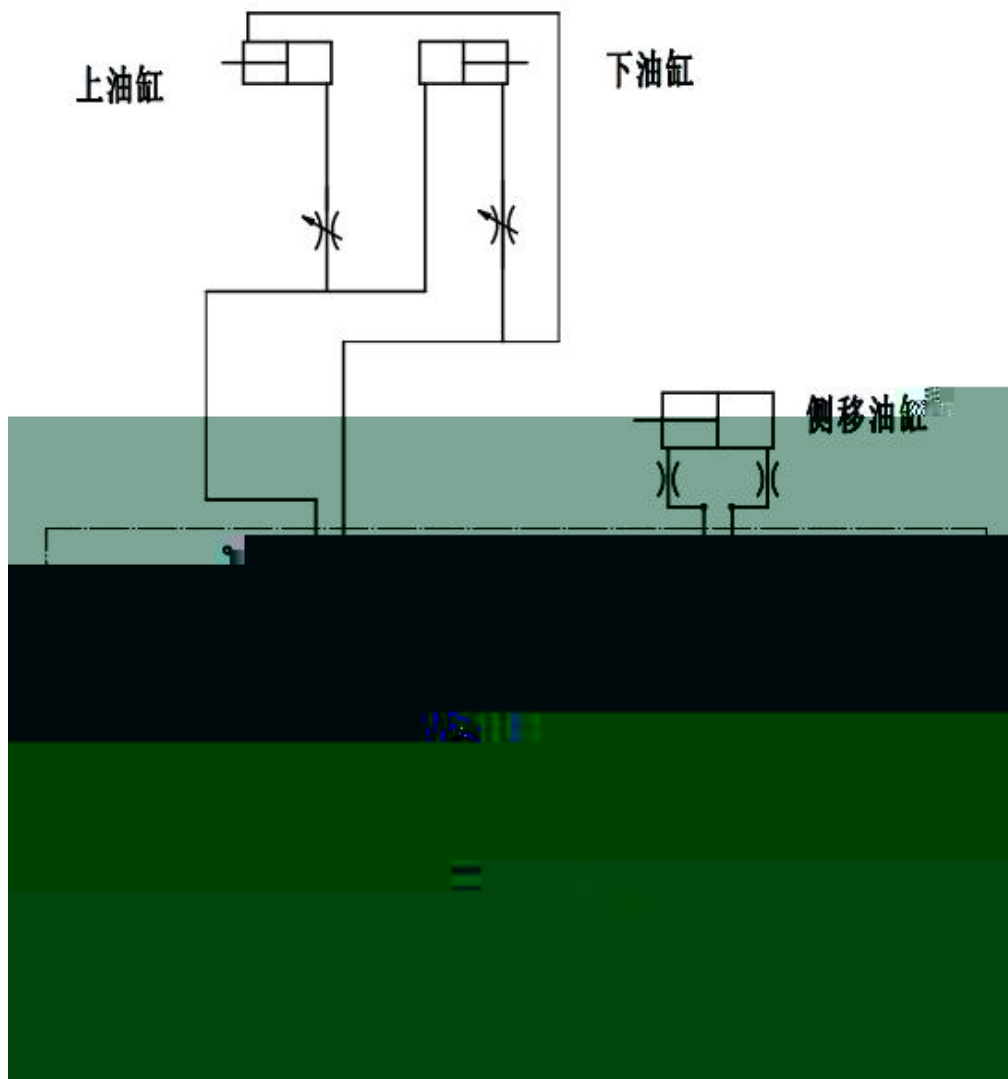
(4)

(5)

3.2

M16x1.5

24





4.

4.1

4.1.1

4.1.2

4.1.3

4.1.4

4.1.5

4.1.6

4.2



5.

5.1

5.2 100

5.3 500

5.4 1000

1.5 mm(1-2.5T) 3 mm(3-4.5T) 5 mm

6.

6.1

6.1.1

6.1.2

6.1.3

6.2



$K \quad \Delta \quad \ddot{U} \quad \omega$

6.2.1



κ Δ $\ddot{U}$ ω

(5)

7.3

(1)

(2)

(3)