

# NC Joining Module NCFS

Type 2152A...

## for Joining Operation with 1-Channel Control Systems

The NC joining module NCFS Type 2152A... with integrated strain gage force sensor for a nominal forces of 35 kN and is excellent for use with extremely tight mounting requirements. Its narrow design reduces the necessary spacing between individual joining modules and eliminates the need for offsets or stacking.

- Force control
- High velocity
- Practical repeatability <0,01 mm
- High measuring accuracy
- Active compensation of process compression for exact positioning
- High overload capacity (approx. 150 %)
- Low maintenance
- Easy handling

### Description

The NC joining modules NCFS Type 2152A... are installed in a robust housing with the displacement sensor integrated absolute encoder, and the strain gage force sensor. The drive motor is an electrically commutated AC servo motor which is driven by a servo controller. This servo controller provides constant speed independent of load.

The NC joining system consists of the NC joining module NCFS Type 2152A..., the evaluation system DMF-P A300 NCF Type 4734A... and the servo controller IndraDrive (Fig. 1, functioning principle).

The operation range of the threaded spindle drive is controlled by the servo electronics.

Signal conditioning of sensors is done by the evaluation system DMF-P A300 NCF Type 4734A... . This device is an extremely efficient and compact instrument which displays the force-displacement measurement graphically and evaluates continuously all phases of a process by means of programmable tolerance windows.

Profibus interface and an Ethernet connection for the output of QA data (I-P.M. or Q-DAS format) are standard for the DMF-P A300 NCF Type 4734A... . Positions and joining parameters may be edited via menu-driven parameters in the device unit.



### Application

The NC joining module NCFS Type 2152A... is excellent for applications in automated production plants.

Vertical and horizontal installation is possible and is performed by flange mounted assembly. The ram has several threaded holes for tool mounting (please refer Fig. 3).

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### Technical Data

Dimensions	mm	Fig. 3
Assembly		Flange assembly
Direction of measurement		tension/ compression
Nominal joining force	kN	35
Stroke length speed 35 kN	mm	450
Anti rotate tool fitting		Fig. 3
Max. speed	mm/s	200
Operating time at nominal force	%	100
Displacement sensor system		Absolute encoder
Resolution	mm	0,001
Force sensor		strain gage
Accuracy	%	<0,5
Temperature range	°C	10 ... 40
Protection class		IP54
Life cycle roller screw (acc. to defined drive profile)	cycles	approx. 10 million

<b>Servo Controller</b>	Bosch-Rexroth Type IndraDrive	
Interface		Profibus
Control voltage	VDC/W	24 (19,2 ... 28,8) /24
Power connection	V	400 (400 ... 500) ±10 %
	Hz	50/60 ±2 %
	phase	3
<b>Evaluation Unit</b>	DMF-P A300 NCF Type 4734A...	
Interface		Profibus
Supply	VDC	24 ±10 %

### Possible Assembly

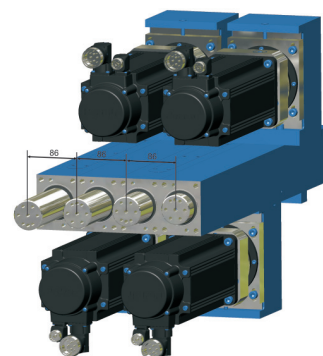


Fig. 2: Example for extremely narrow assembly space requirements from NC joining module NCF5

### Functional Principle

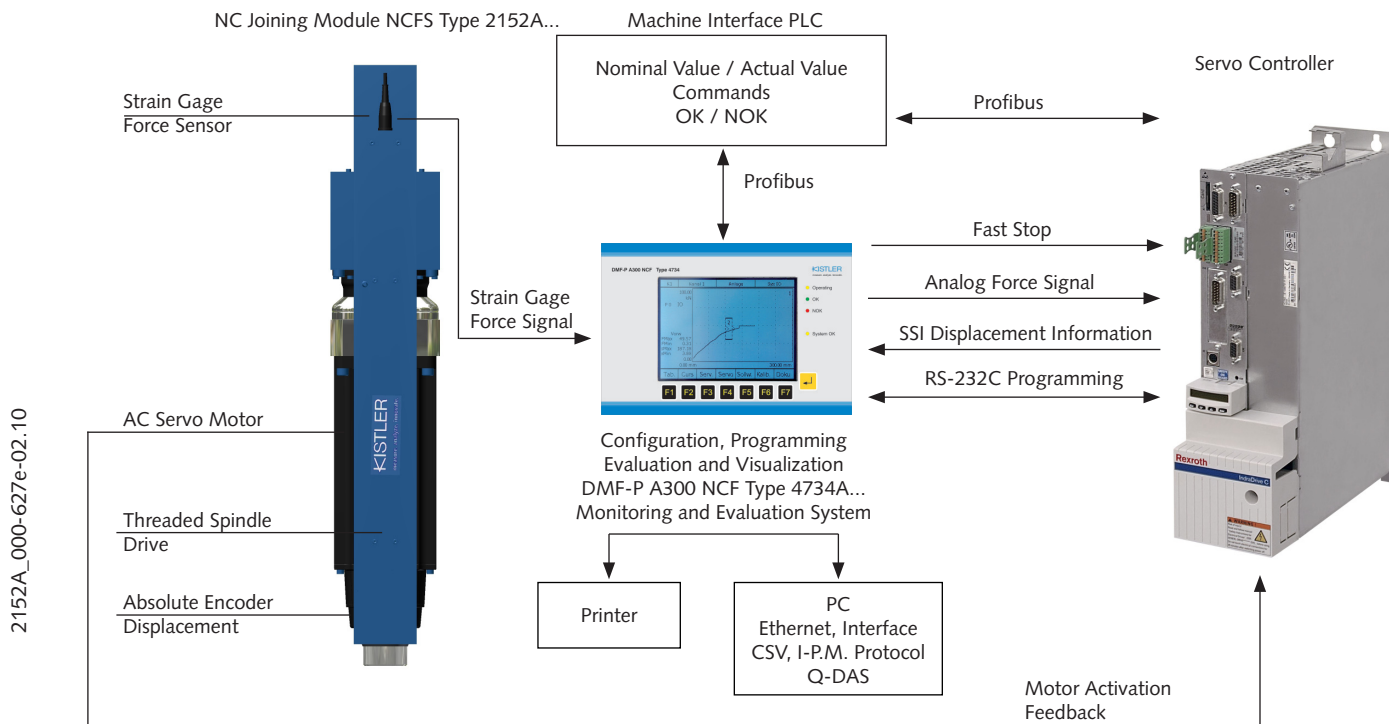


Fig. 1: Functional principle of NC joining system with NC joining module NCF5 Type 2152A...

**Dimensions**

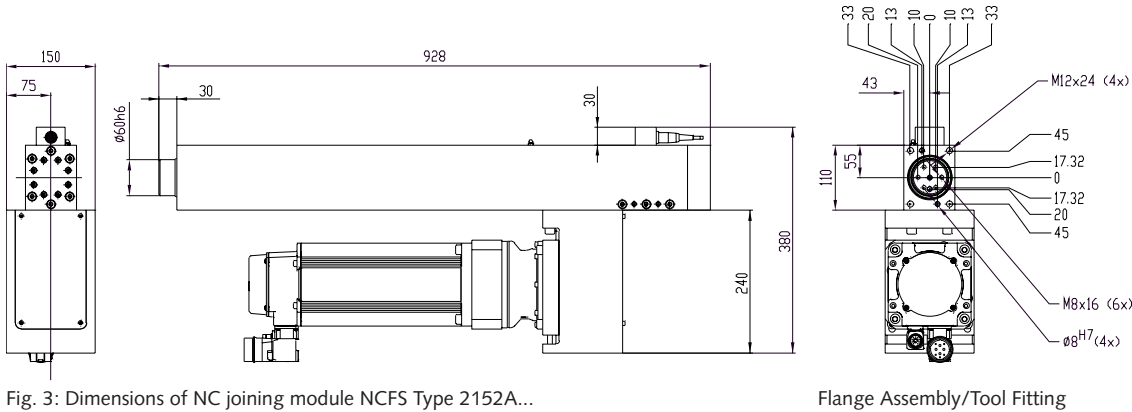


Fig. 3: Dimensions of NC joining module NCFs Type 2152A...

Flange Assembly/Tool Fitting

Type	Nominal Force kN	Stroke mm	L mm
2152A35450	35	450	928

Assembly may require an external guidance for the ram. Radial forces such as tool weight must be observed during design and installation.

**Application Example**

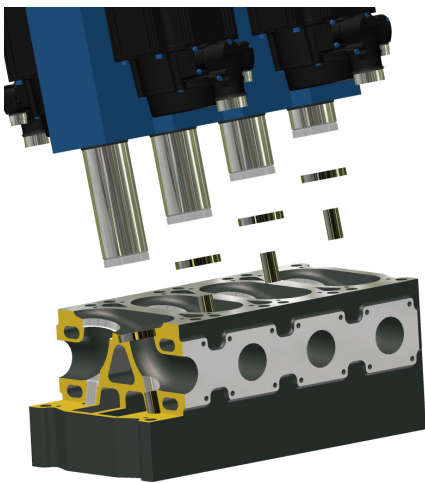


Fig. 4: Assembly valve guide

**Included Accessories**

- None

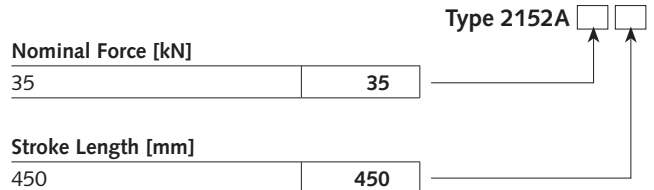
**Optional Accessories**

- Servo Controller for Type 2152A... IndraDrive 54 A PB MPH07 **Type/Art. No.** KSM035375
- Servo Controller for Type 2152A... IndraDrive 54 A PB S2 MPH07 KSM035374
- Evaluation unit DMF-P A300 NCF 4734A...
- Desktop housing evaluation unit 4734ATDY1X400S1
- Wall housing evaluation unit 4734AWDY1X400S1
- Panel housing evaluation unit 4734AEDY1X400S1

**Cables**

- NCFN(S) 30 (35) motor cable RKL4309 5 m KSM303490-5
- NCFN(S) MSK feedback cable RKG4200 5 m KSM303500-5
- NCF cable SSI-displacement IndraDrive 5 m KSM301750-5
- NCF data cable IndraDrive 5m KSM301640-5
- NCFN(S) strain gage force cable 5 m KSM206000-5
- NCF cable F-analog IndraDrive 5 m KSM301760-5
- NCF cable XTE, YTE IndraDrive 5 m KSM314030-5

**Ordering Key**



**Ordering example:**

**Type 2152A35450**

NC joining module NCFs **Type 2152A...**, nominal force **35 kN**, stroke length **450 mm**.

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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