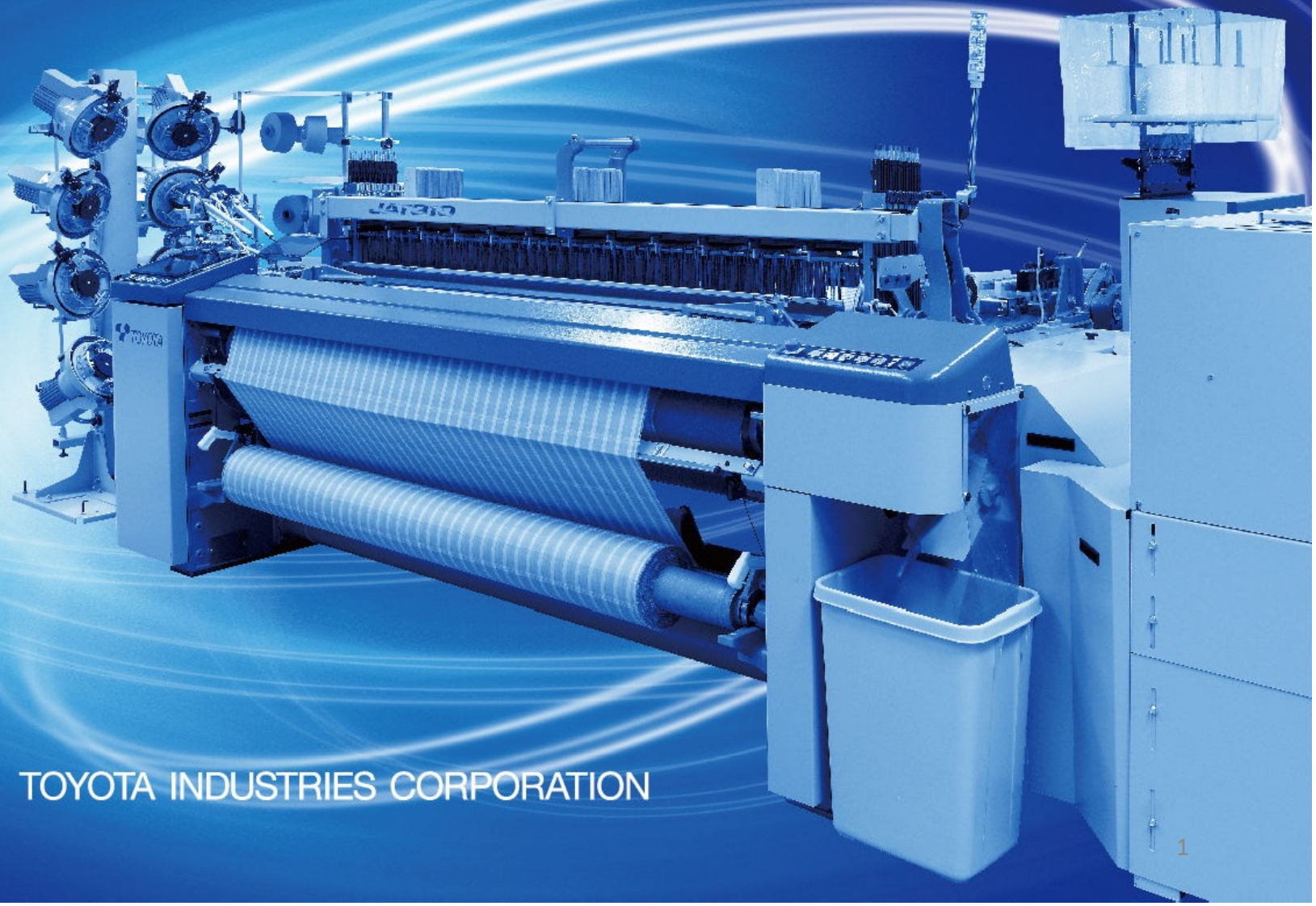
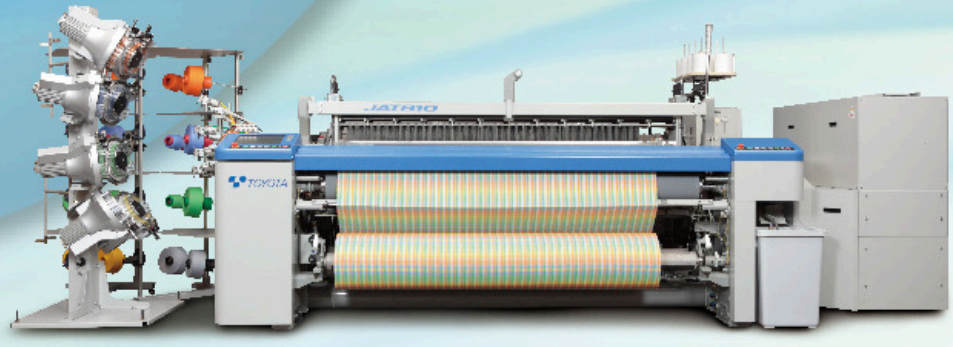
JAT810 TOYOTA AIR JET LOOM



TOYOTA INDUSTRIES CORPORATION

Energy Saving

Air Consumption 20% Reduction



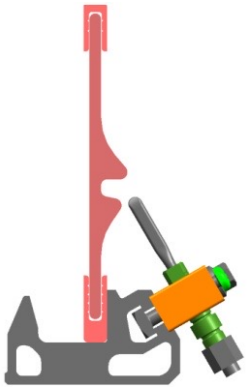
The newly designed weft insertion system, including EDP, sub nozzles, and JAT e-REED, delivers further reductions in air consumption and air pressure.

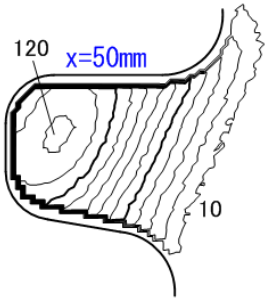
Low pressure spec

Energy Saving

e-REED

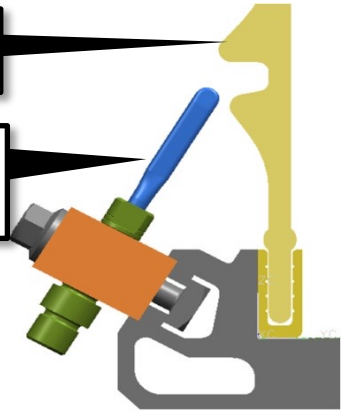
Standard



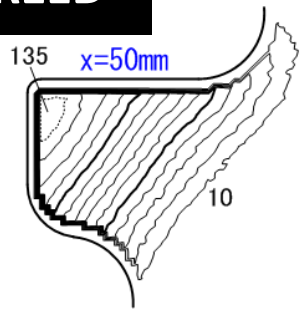


Standard Reed

Standard Sub Nozzle



e-REED



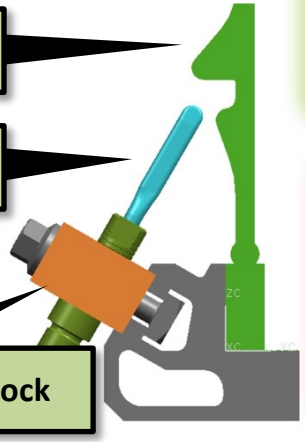
Jetting Speed Up

Optimized Reed Shape (Toyota Original)

e-REED

New Sub Nozzle

New Sub Nozzle Block

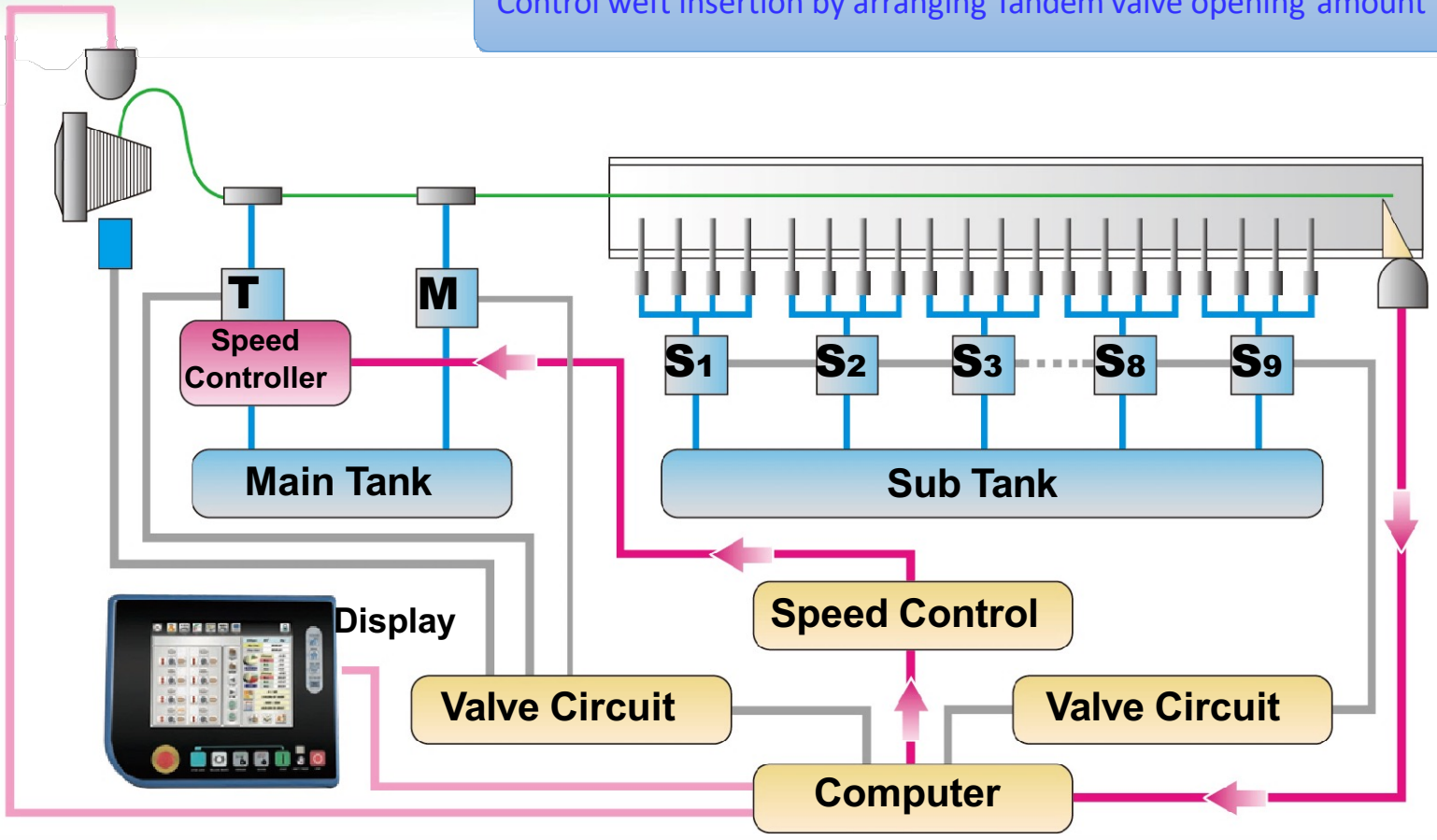


Sub Pressure Reduction

Weft insertion control [EPCm]

<Existing system [AFC]>

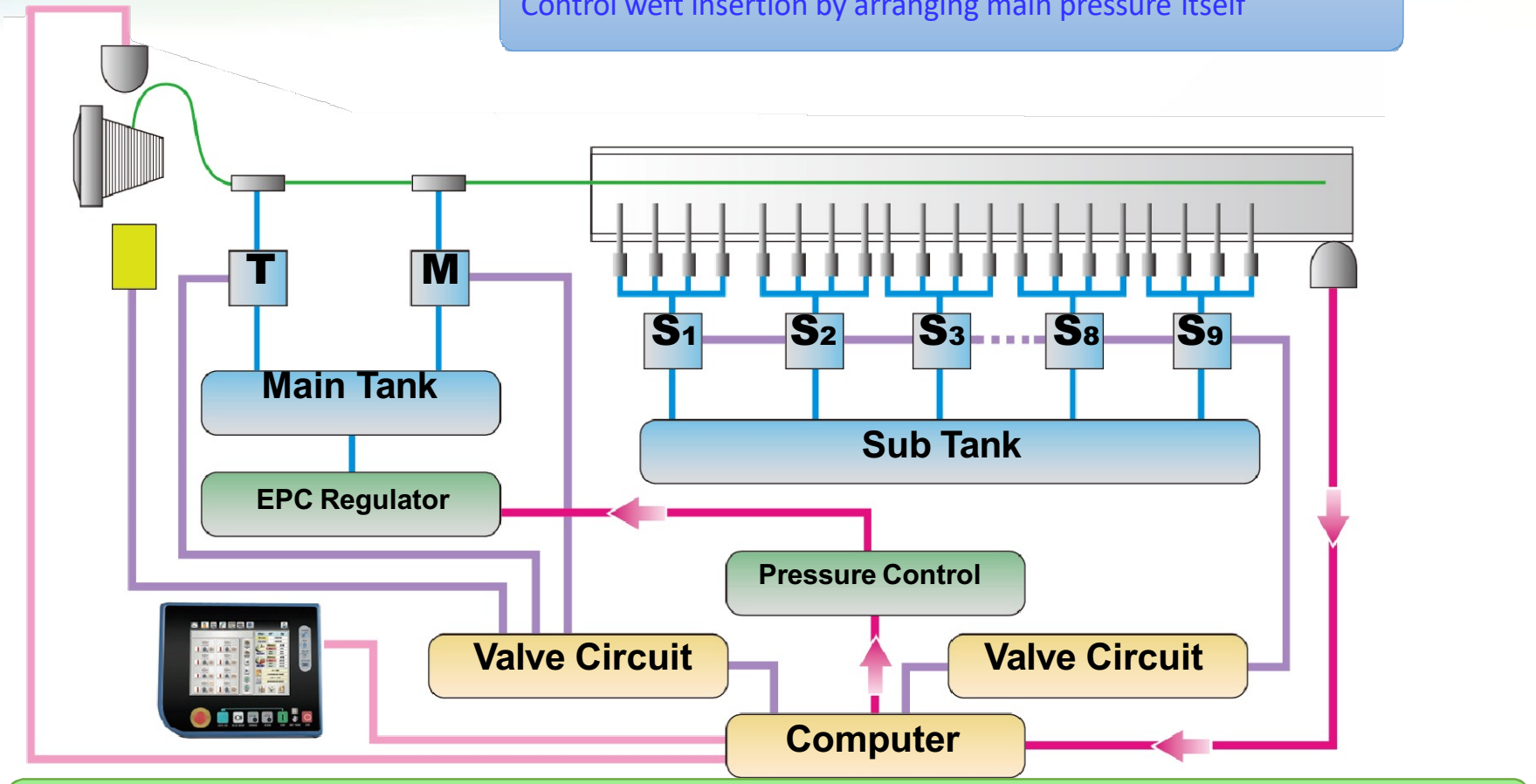
Control weft insertion by arranging Tandem valve opening amount



Weft insertion control [EPCm]

<New system [EPCm]>

Control weft insertion by arranging main pressure itself

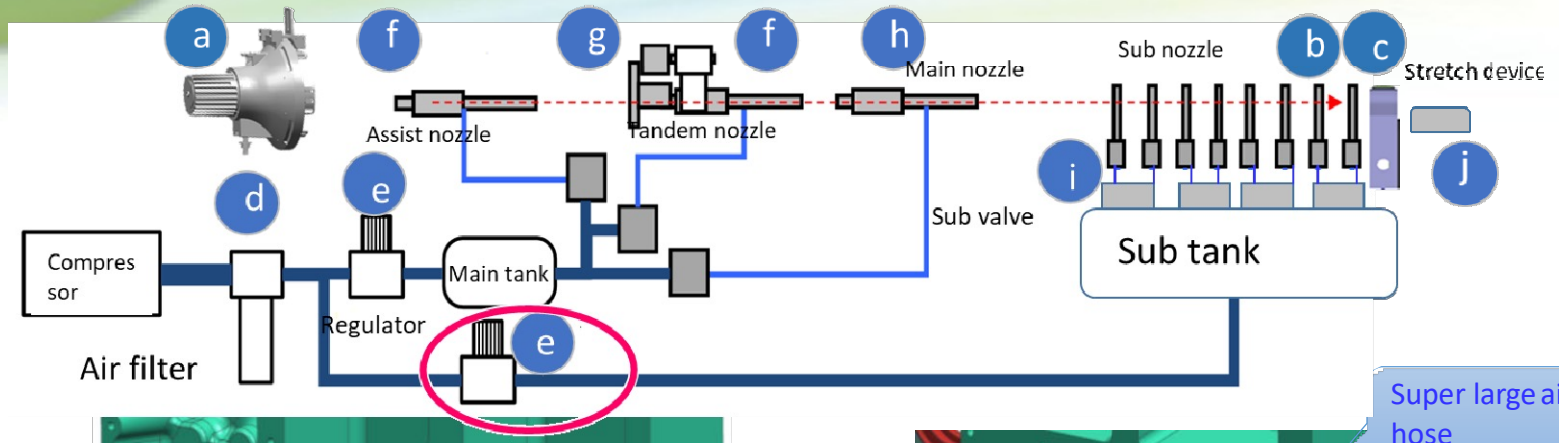


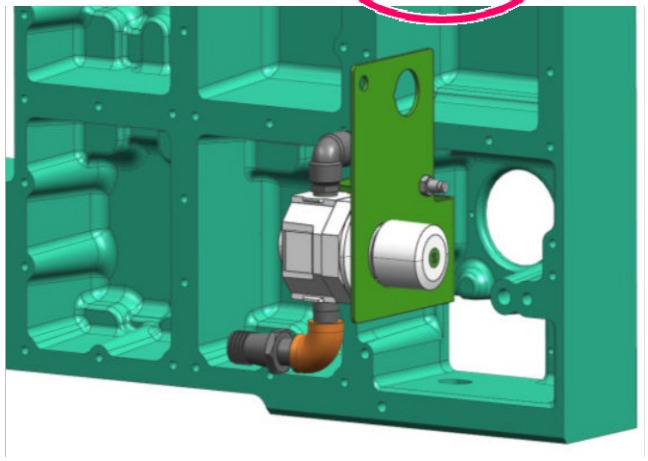
Main pressure is reduced by 10-20%

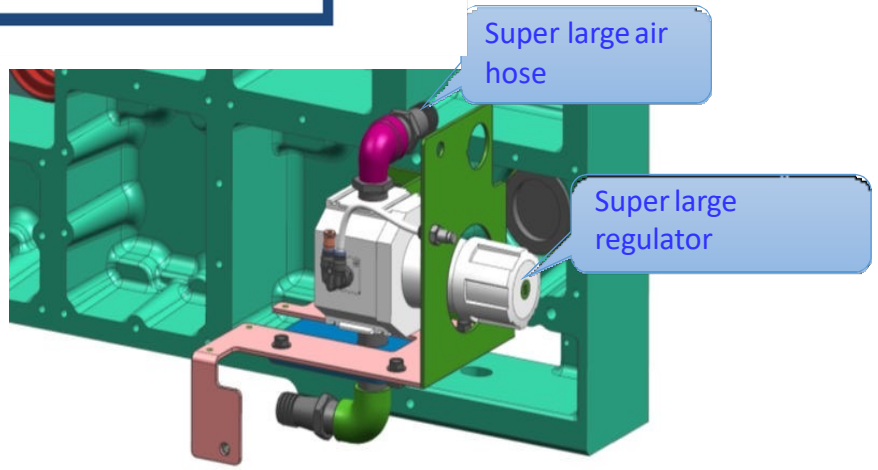
New air distribution system

New Pressure regulator

System pressure Saving







30Kpa reduction in pressure loss
⇒Higher Main and Sub pressure possible with same inlet pressure

NEW OPTIMIZED WEFT INSERTION

P-monitor plus

Pressure management
(Case 1)

Date of data: 06/17 15:43

Current date: 06/17 15:46

	Pressure item	Highest value	Lowest value
○	System pressure (stop)	0.69 Mpa	0.69 Mpa
○	System pressure(run)	0.67 Mpa	
○	Main pressure (run)	0.43 Mpa	0.39 Mpa
◉	Sub pressure (run)	0.45 Mpa	0.45 Mpa

○	Filter pressure loss	0.01 Mpa
	System pressure margin	0.22 Mpa
	System pressure fluctuation	0.01 Mpa

System pressure from compressor

Max air pressure currently using

Excess air pressure

A001 0.45	A002 0.45	A003 0.45	A004 0.45	A005 0.45	A006 0.45	A007 0.45	A008 0.45	0.45	0.45
A011 0.45	A012 0.45	A013 0.45	A014 0.45	A015 0.45	A016 0.45	A017 0.45	A018 0.45	A019 0.45	A020 0.45
A021 0.45	A022 0.45	A023 0.45	A024 0.45	A025 0.45	A026 0.45	A027 0.45	A028 0.45	A029 0.45	A030 0.45
A031 0.45	A032 0.45	A033 0.45	A034 0.45	A035 0.45	A036 0.45	A037 0.45	A038 0.45	A039 0.45	A040 0.45
A041 0.45	A042 0.45	A043 0.45	A044 0.45	A045 0.45	A046 0.45	A047 0.45	A048 0.45	A049 0.45	A050 0.45

By monitoring each pressure data, visualize EXCESS air pressure and easy to adjust MIN requirement at the compressor side

NEW OPTIMIZED WEFT INSERTION

P-monitor plus

FACT

Pressure management (Case 2)

Date of data: 06/17 15:53

Current date: 06/17 15:55

	Pressure item	Highest value	Lowest value
○	System pressure (stop)	0.69 Mpa	0.69 Mpa
○	System pressure(run)	0.67 Mpa	0.0 / Mpa
◉	Main pressure (run)	0.63 Mpa	0.39 Mpa
○	Sub pressure (run)	0.45 Mpa	0.41 Mpa
○	Filter pressure loss	0.01 Mpa	
	System pressure margin	0.04 Mpa	
	System pressure fluctuation	0.01 Mpa	

System pressure from compressor

Max air pressure from Main 0.63

A001 0.43	A002 0.42	A003 0.43	A004 0.43	A005 0.43	A006 0.42	A007 0.42	A008 0.42	A009 0.42	A010 0.43
A011 0.42	A012 0.42	A013 0.42	A014 0.43	A015 0.43	A016 0.42	A017 0.42	A018 0.42	A019 0.42	A020 0.42
A021 0.42	A022 0.42	A023 0.42	A024 0.42	A025 0.60	A026 0.42	A027 0.43	A028 0.63		
A031			A034 0.43	A035 0.42	A036 0.42	A037 0.42	A038 0.42		
	A042 0.42	A043 0.42	A044 0.42	A045 0.42	A046 0.42	A047 0.42	A048 0.42		
A051 0.42	A052 0.42	A053 0.42	A054 0.42	A055 0.42	A056 0.43	A057 0.43	A058 0.43		
A061 0.42	A062 0.42	A063 0.42	A064 0.43	A065 0.43	A066 0.43	A067 0.43	A068 0.43	A069 0.43	A070 0.43

System pressure (stop) : 0.69
System pressure(run) : 0.67
Main pressure (run) : 0.63
Sub pressure (run) : 0.43
Filter pressure loss : 0.00
Style : STYLE17
RPM : 800

2 looms main pressure affect entire plant's pressure

By monitoring each pressure data, visualize EXCESS air pressure and easy to adjust MIN requirement at the compressor side

NEW OPTIMIZED WEFT INSERTION

P-monitor plus

System pressure mode

Select

Date of data: 06/06 10:22

Current date: 06/06 10:23

	Pressure item	Highest value	Lowest value
◉	System pressure (stop)	0.70 Mpa	0.60 Mpa
○	System pressure(run)	0.69 Mpa	0.59 Mpa
○	Main pressure (run)	0.60 Mpa	0.27 Mpa
○	Sub pressure (run)	0.65 Mpa	0.41 Mpa
○	Filter pressure loss	0.03 Mpa	
	System pressure margin	-0.06 Mpa	
	System pressure fluctuation	0.05 Mpa	

A001 0.70	A002 0.70	A003 0.70	A004 0.70	A005 0.70	A006 0.70	A007 0.70	A008 0.70	A009 0.70	A010 0.70
A011 0.70	A012 0.70	A013 0.70	A014 0.70	A015 0.70	A016 0.70	A017 0.70	A018 0.70	A019 0.70	A020 0.70
A021 0.70	A022 0.70	A023 0.70	A024 0.70	A025 0.70	A026 0.				A030 0.70
A031 0.70	A032 0.70	A033 0.70	A034 0.70	A035 0.70	A036		0.70	0.70	A040 0.70
A041 0.60	A042 0.60	A043 0.60	A044 0.60	A045 0.60	A046 0.6				A050 0.60
A051 0.70	A052 0.70	A053 0.70	A054 0.70	A055 0.70	A056 0.7				A060 0.70
A061 0.70	A062 0.70	A063 0.70	A064 0.70	A065 0.70	A066 0.7				A070 0.70
A071 0.70	A072 0.70	A073 0.70	A074 0.70	A075 0.70	A076 0.7				A080 0.70
A081 0.70	A082 0.70	A083 0.70	A084 0.70	A085 0.70	A086 0.70	A087 0.70	A088 0.70	A089 0.70	A090 0.70

Irregular air pipe

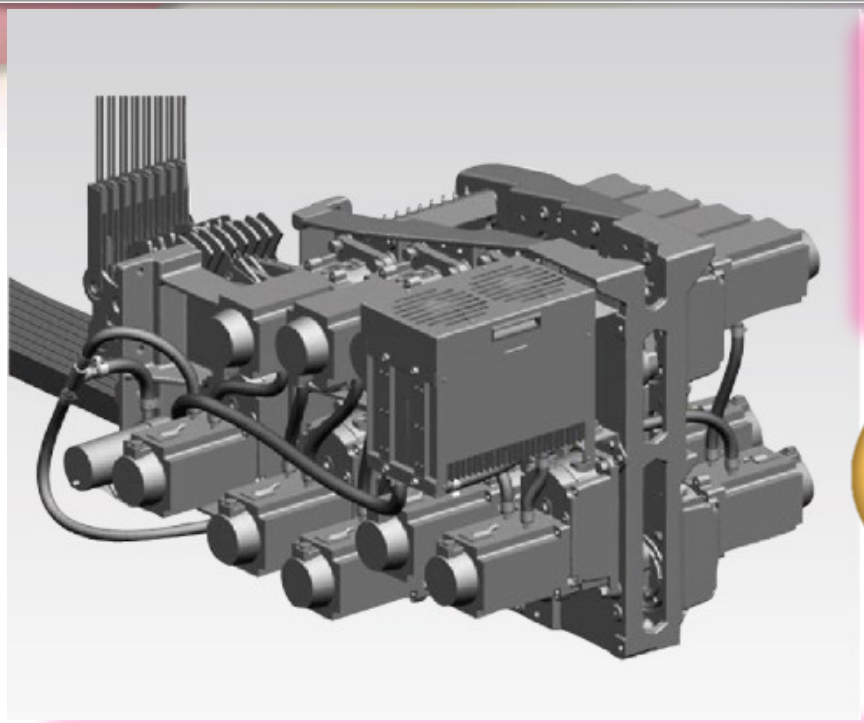
System pressure (stop) : 0.60
System pressure(run) : 0.59
Main pressure (run) : 0.28
Sub pressure (run) : 0.42
Filter pressure loss : 0.00
Style : STYLE01
RPM : 800

High → Low

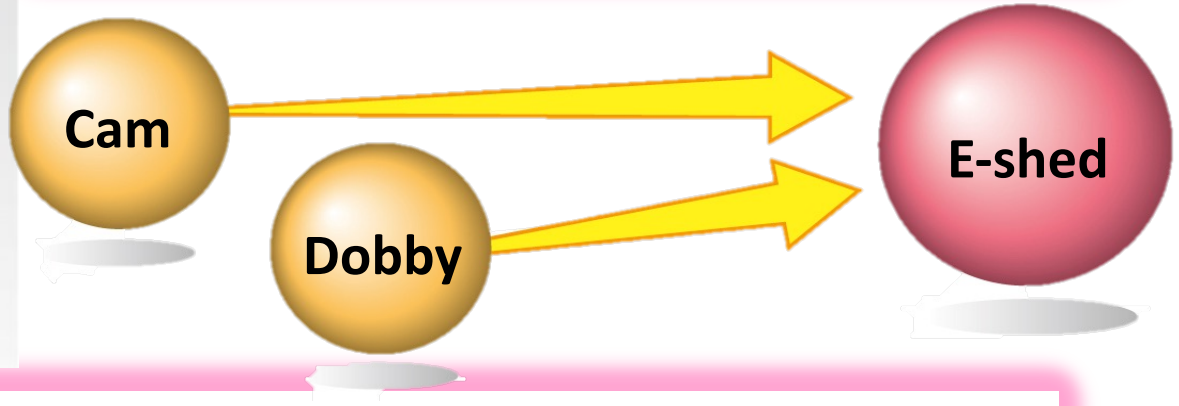
By monitoring system pressure data,
Visualize air leakage and factory pipe abnormality

Various Option

About E-shed



- Individual servo motor for each frame
  *Both dwell & cross timing are freely adjustable through Function Panel.



1.Advantage of Dobby & Cam motion in One Shedding Motion

- Speed : E-shed≒Fastest Cam motion
  E-shed > Fastest Dobby motion
- Versatility : E-shed > Any Dobby motion

2.Running “More Complex Fabric” at “More High Speed”

New Technology

E-shed New technology

Hybrid E-shed for R/S190

1) Existing E-shed

	8 shaft（EC）	16 shaft（ES）
Max Speed	1150rpm	1000rpm (At any number of shafts)

2)New hybrid E-shed

	8 shaft（EC）	16 shaft Hybrid E-shed	
Max Speed	1150rpm	～ 8 shaft 1150rpm	9 shaft ～ 1000rpm

By improving parts and shedding angle
achieve more high speed when use Max 8shafts

New Technology

E-shed New technology

Hybrid E-shed for R/S210

1) Existing E-shed

	8 shaft（EC）	16 shaft（ES）
Max Speed	1100rpm	950rpm (At any number of shafts)

2)New hybrid E-shed

	8 shaft（EC）	16 shaft Hybrid E-shed	
Max Speed	1100rpm	～ 8 shaft 1100rpm	9 shaft ～ 950rpm

By improving parts and shedding angle
achieve more high speed when use Max 8shafts