



[Unfollow Sampath](#)

Sampath Kumar R

## KICKER LINE (PIG LAUNCHER / RECEIVER) SIZING CRITERIA

**Sampath Kumar R**

Upstream Process Engineer at Technip

Dear Friends,

Could you tell me what is the criteria for sizing KICKER line (in Pig Launcher/ Receiver).

I noticed that few clients design the kicker line considering 50% of the production and others simply fix 4" or 6".

Regards

Like (1) • Comment (9) • Unfollow • Reply Privately • September 30, 2011

### Comments

[Sampath Kumar R](#) likes this

9 comments



**Thai D. Pham**  
STAFF CONSULTANT

Sampath,

Thai

you might find sufficient information regarding your concern in SHELL design & engineering practice DEP 31.40.10.13-Gen or several other guidelines available on the internet. I could understand the size of the line is to limit the pigging velocity in pipeline and the pig movement not to hit the barrel end too hard so that the pig can be damaged especially the Intelligent pig. Cheers, T

Like • Reply privately • Flag as inappropriate • September 30, 2011



**Sampath Kumar R**  
Upstream Process Engineer at Technip

Sampath

Thanks for ur prompt resposne Mr.Pham. Let me check Shell DEP.

Regards  
Sampath

Like • Reply privately • Flag as inappropriate • October 1, 2011



**amirabbas jalali**  
JAHAN PARS Engineering Company(JPC), DRAGOIL Compony

amirabbas

Dear,what is the pig maximum velocity in pipeline. is there any criteria?

Like • Reply privately • Flag as inappropriate • October 1, 2011



**Mario Arredondo Arce**  
Partner en PE & PM

Mario

Hi, I read that pigging velocity should be 1-3 ft/s, I can't find the reference. Hope this could be of help.

Like • Reply privately • Flag as inappropriate • October 2, 2011



**Sampath Kumar R**  
Upstream Process Engineer at Technip

Sampath

Dear Mario,  
I too came across that average pig velocity in a pipeline will be around 2 m/s. however, few flow assurance study indicates that pig velocity in the range of 2 to 15 m/sec.

i dont have clear idea about this issue.. can anybody help????

Like • Reply privately • Flag as inappropriate • October 2, 2011



**Saeid Rahimi Mofrad**  
Senior Specialty Process Engineer at Fluor

The size of kicker line can be specified based on the velocity up to double of common velocity criteria for gas and liquid (or 50% of normal production flow). Kicker line size is not critical because it is going to be used for short period of time for filling the pig trap and moving the pig for couple of meters under control. There should be no problem as long as kicker line is not extremely undersized.

Pig speed in pipeline in normally controlled through charge pump, globe valve or other mechanisms.

Pig speed is generally depends on:

1- Type of pig

- Conventional type: 0.5 -2.5 m/sec
- Intelligent type: 1-2.5 m/sec (the capability of data logging device should be considered in selecting pig speed )
- By-pass type: 3-5 m/sec (product flow velocity can be up to 10 m/sec)

2- Pigging fluid (gas or liquid)

For gas service, no lubrication is available and being compressible fluid pigging usually occurs in a series of high speed excursions between localized restrictions. Aside from the safety aspects, this causes inefficient pigging (sealing failure) and increased wear. That is why lower velocity limit is recommended for gas services.

Delete • October 2, 2011



**Thai D. Pham**  
STAFF CONSULTANT

Thai

Saeid, you're definitely right by the explanation of the kicker line that installed on a pig launcher. For a receiver, time involved much longer than that of launching the pig, we ought to open the bypass line to catch the pig without knowing exactly when it arrives. Early opening of the bypass line can make changes to the pipeline operation.

Folks, please be noted that we normally use the same word "kicker line" which installed either a launcher or receiver, this has made a world well-known engineering company provide a launcher instead of a receiver. the kicker line on launcher and bypass line on receiver are positioned differently on a pig trap while the trap don't have both functions.

As for the pig velocity, there are number of rules of thumb, however, this should be confirmed by a Flow Assurance study in conjunction with preferred pigging vendors' recommendation.

Like • Reply privately • Flag as inappropriate • October 2, 2011



**Galih Pandu Atmaja**  
Facility Engineer at Chevron

Galih  
Pandu

Dear Sampath,

I personally suggest you to check with the client's company standard, first in which the project you are working on; see if they have reference for the pig barrel fitting size. As like Pham has indicated that Shell might had this reference; I suppose, they are for their own design basis.

I, myself, had seen a company standard which provides "rule-of-thumb" for dimension of pig launcher, receiver, or both -for bidirectional flow-; including the fittings size, and they are all listed based on the size of main pipeline (so, it is related indirectly also with the flow in the main line as the sizing basis).

Hope this helps

Like • Reply privately • Flag as inappropriate • October 2, 2011



**Sampath Kumar R**

Upstream Process Engineer at Technip

Sampath

Dear Friends,

Thanks for all for ur responses.. Finally I could get idea to fix Pig Velocity and size the Kicker Line. As Mr.Pham told, I have referred Shell DEP and its clearly given about the Kicker Line Sizing basis.

Thanks once again.

Regards  
Sampath

Like • Reply privately • Flag as inappropriate • October 3, 2011

Add a comment...

**Send me an email for each new comment.**

Add Comment